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MEDICAL PRACTICE AMONG THE SOMALIS

LEON BROTMACHER*

Basis of Investigation

Many descriptions of Somaliland have been written since Captain (later Sir Richard) Burton first explored the interior, but only those of Paulitschke (1) and Drake-Brockman (3) include any details of Somali medical practice. Further information is therefore of interest.

This study was made during 1948. Part of the writer's period of Military Service was spent in Somaliland (see map) in successive charge of Dagabur Native Hospital and the general medical wards of Hargeisa Civil Hospital, both of which were administered by the British Military Government. Ignorance of the destination before leaving England made it impossible to make a preliminary study of the literature concerning the territory and its medical lore, and unfortunately no previous interest in social anthropology had been aroused. However, the nature of the duties provided opportunities for contact with the local population which were quite exceptional for a National Service Officer, and material of great interest was obtained from British and Italian trained male and female Somali medical orderlies and native practitioners introduced by them to the writer. The informants included Mullahs who practised medicine and those whose knowledge was purely religious, a physician and a

*From the Royal Infirmary, Cardiff, Wales.

midwife belonging to the tribe of the Midgans (v. inf.) and Midgan and Eidegalla surgeons.

General Introduction

The Somalis inhabit the "Horn of Africa," i. e. that portion of the Continent which projects eastwards between the Gulf of Aden and the Indian Ocean. Apart from a coastal plain of varying width it is a vast plateau of an average elevation of three thousand feet. The greater part of the country is very arid and not cultivable by the methods at present available to the inhabitants.

The Horn of Africa was known to Mediterranean civilisation thirty-five centuries ago. Somaliland, to the Ancient Egyptians, was the land of Punt, and to the Romans, the Regio Aromatifera or Cinnamomifera. It was visited by Phoenicians and Greeks, being a centre for trade with India and lands further East. Its commercial importance declined with the Christian era, despite an attempted revival by Justinian. Immigration from across the Gulf of Aden commenced when small numbers of Moslems sought refuge in Somaliland to escape persecution by pagan Arabs, before Islam became universal throughout Arabia. For varying reasons a steady influx followed and continues to this day, though few pure Arabs are found outside the coastal areas. The coast was visited by Turks, Portuguese and Egyptians and the interior suffered periodic Ethiopian incursions. With the division of Africa at the end of the nineteenth century the territory was partitioned between Britain, France, Italy and Ethiopia. In 1899, a fanatical religious leader, afterwards known as the Mad Mullah, commenced a rebellion which was not to be subdued until after the first World War and which postponed until 1920 the effective occupation of the interior of British Somaliland. Ethiopian influence in the Ogaden was at no time great and contact with Europeans hardly existed until the Italian conquest in 1935. The inhabitants of the region where the investigations were conducted are, therefore, among the last of primitive peoples to be reached directly by Western influences. This makes their culture an especially attractive subject for study.

The vast majority of Somalis are nomads, living in camel-skin tents. Their diet consists for the most part of milk and meat. They are herdsmen, the camel being their most important animal. They are organised into a large number of tribes, each with its own rather loosely defined grazing areas. Of especial note are the three outcast clans, the Midgans who are hunters, the Tomals who are smiths and the Yebirs, the leather workers and sorcerers of Somaliland.

The Somalis regard themselves as descended from two Arab Sheikhs, Isshak and Darod. They are, however, usually considered to belong to the Eastern branch of the Hamitic peoples, being closely related to the

Fig. 1.

Gallas and Danakils, although there has undoubtedly been a Semitic admixture. The tradition of Arab descent, which is the basis of the tribal system, may well, therefore, have some historical foundation, although the date of the migration of the two chiefs has been put as early as the

seventh, and as late as the sixteenth century. Somali culture is largely a blend of aboriginal Hamitic features with Arab influences, both Islamic and pre-Islamic, features of the latter having been introduced by Moslem Arabs amongst whom they persisted, or perhaps to some extent as a result of social communication across the Gulf of Aden before the seventh century. The origins of some aspects of their way of life are clear. Thus they are Sunni Mohammedans, their language is Hamitic and their demonology obviously derived from pagan Arab beliefs. The source of other aspects is often difficult or impossible to identify. The problem is not confined to the Somalis; for example, Westermarck (4) met it when studying the Berbers.

Before describing any aspect of their culture, it is necessary to consider why, apart from their religion, the Somalis have been so little influenced by the numerous civilisations with which they have come into contact during the past thirty-five centuries. They are familiar with the products of the ancient world. Matchlock rifles were already in use in the country in the sixteenth century. Somalis have voyaged near and far ever since, with the opening of the Suez Canal, the Red Sea became a main shipping route. American cotton goods were being traded in the interior many decades before Colonial rule became established. Notwithstanding this, and despite a keen intelligence and ability to learn, the Somalis remain an iron-age people without, *inter alia*, permanent buildings, a written language of their own, or political organisations above the level of the tribe.

Geographical factors play a large part in producing this paradox. The waterless maritime plain reduces contact with the interior to limited numbers of caravans in the cool season and has largely confined external influences to the coast. The extreme harshness of the climate, reducing life to little above subsistence level, and the lack of water, compelling a nomadic existence, have retarded progress. The Somali has also been insulated against external influences by extreme conservatism, pride and a xenophobia well illustrated by his ambivalent attitude to the Arab, whom he regards as his kinsman, yet dislikes. The flowering of Arab civilisation after the advent of Islam was associated with northward migration and conquest and in any case owed much to the assimilation of the pre-existing advanced cultures of the peoples conquered. This did not apply in Somaliland, which received few immigrants and remained largely unaffected. The extreme lawlessness of the region has been a brake on progress, even in the twentieth century. Failure to develop a written

language, combined with an absence of urban civilisation and nation-wide political authority have been causes as well as results of lack of advancement.

Medical Organisation

As Harley (5) has pointed out in his study of the Mano, primitive medicine combines rational, magical and religious approaches, without clearly distinguishing between them. Somali practice is no exception. The *wadad* or " doctor " may be a Mullah who has acquired a knowledge of medical lore, or a " layman." The latter is usually a member of the outcast tribe of the Midgans. Surgery likewise is practised by Midgans, and gynaecology, obstetrics and treatment of diseases of infancy are in the hands of their womenfolk.

The medicine practised by the Mullahs is based on a body of tradition which is supposed to date back to the time of Mohammed. The more senior members of the *tarīka*, the communal settlement of Mullahs, pass on this knowledge to those who wish to acquire it at the same time as they are mastering the main body of religious writings. The medical lore of the Midgans is passed down from father to son, or mother to daughter. The information is not necessarily handed down to the oldest child and a stranger may be taught for a fee; no attempt is made to confine medicine to a closed circle. From time to time an ordinary person, following a vision or some other source of inspiration, undertakes treatment of the sick. In 1947 a woman named Nuria, i. e. light, the mother of six children, dreamt that an angel told her to commence treating people, using special herbs. She carried out this instruction, practising in the area between Hargeisa and Borama, payment being voluntary. For ten months she enjoyed considerable fame and patients came to her from as far as Aden and Jibuti. Although successful with minor ailments such as constipation, her failure to cure more serious conditions resulted in a rapid decline back into obscurity.

The Mullah's treatment always includes prayer and reading from the Koran, especially from the Sura Yasin. When a " lay " practitioner is employed, a Mullah, not necessarily versed in medicine, is summoned. Both categories of *wadad* employ in addition a variety of magico-religious techniques. An amulet containing Koranic verses may be tied around the patient's neck, or the parchment on which they are written may be pounded with water, and placed on the sick man's head, or given him to drink.

Both Mullah and Midgan *wadads* are held in high esteem. While many

Midgans are sweepers, Midgan *wadads* are never thus employed, although, like their mediaeval European surgical counterparts, they may be barbers. They are expected to put the good of the patient before everything, and to treat all who seek their assistance, whether rich or poor, or belonging to an outcast tribe. They may be called during the night and often make a journey of several days to see a patient. They are willing to treat foreigners and even infidels, although it is doubtful if the occasion ever arises. Male patients, unless very ill, visit the *wadad*, but it is customary for him to see women in their tents. He is allowed to examine all parts of the female body with the exception of the genital region. Indiscreet communication of information professionally acquired may have dire consequences; for example, the disclosure of a man's illness to his prospective father-in-law and consequent upset of his marriage might result in a family feud in which the *wadad* would be involved. However, if evidence of a breach of the law is found, the *wadad* is under an obligation to inform the Cadi, and he cannot plead privilege in the Cadi's court.

The wealthy keep a *wadad* as part of their entourage. Except in the towns, where monetary payments are the rule, he receives livestock for his services. Apart from his medical work he is, like almost all Somalis, an owner of cattle, the stock being looked after by his wife. The fee depends on the wealth of the patient, as well as the amount of attention paid to him, surgeons receiving more than physicians. If a patient cannot afford a fee, his family is under an obligation to pay for his treatment. Defaulters are occasionally brought before the Cadi, but more often they are cursed. This results in a recurrence of the same disease or contraction of a fresh one. These are not treated unless payment is made promptly, and other *wadads* also refuse their help in these circumstances. Bad debts are rare since there is a general belief in the efficacy of the curse.

Nursing is not regarded as a separate branch of medical care and is undertaken by relatives of the patient, who also treat the simpler conditions. There is an obligation to treat the helpless sick, who are never abandoned to the wild beasts, as has been reported among the Gallas (1). However, chronic and elderly patients are apt to be neglected, and the crippled and deformed are left to manage as best they can, often drifting into the townships as beggars.

Anatomy and Physiology

A knowledge of anatomy and physiology is not regarded as important for the practice of medicine, and, except in the field of surgery, no use is made of these sciences. The Somalis are familiar with gross mammalian anatomy, and the similarities of animal and human form are appreciated. The human body is never dissected and knowledge of its structure is confined to that obtained from superficial inspection and from examination of injuries. Concepts of the functions of organs are speculative. The following account of the beliefs and practices of native practitioners is a catalogue of the information volunteered by the various informants with only such cross examination and editing as was necessary to make their meaning reasonably explicit.

Life is due to the presence of spirit (*ruheh*) which is spread throughout the body. It enters the foetus through the vertex when the mother first senses movements, one hundred and twenty days after conception, the time when the foetus, first congealed blood, then a structureless mass, finally assumes human form. The spirit passes out through the vertex at the time of death.

The brain consists of a large mass above, joined to two little brains below. It has the consistency of ghee, and is enclosed in a membrane and surrounded by a clear liquid. The brain, essential for life, is responsible for thought in conjunction with the *khulbi*, an intangible soul substance situated in the left side of the chest. Sleep is due to the *khulbi* becoming covered. Sleeplessness can be caused by worry, hunger or pain. The brain is also regarded as a centre for appreciation of the various forms of sensation, but there are no ideas about the routes by which such information reaches it, and nerves are not distinguished from ligaments and tendons. No function is attributed to the spinal cord. The existence of the corneal, pharyngeal, laryngeal and withdrawal responses is accepted without explanation, and there is no conception of the nervous control of muscle action, beyond a general realisation that it is subject to the will.

The bones, which are hollow, are present in order to give shape to the body, protect internal organs and make muscle action effective. The skull is hollow to house the brain. Its most prominent features, such as the orbits, the foramen magnum and the zygomatic arches are recognised and named, although there is no knowledge of the para-nasal sinuses. The articulations of the skull with jaw and spine are known; the tooth

bearing ridge of the jaw and its fellow on the skull and the small separate ring-like bones of the spine between which movement is possible are recognised. The following bones, with their articulations and other prominent features, are distinguished and separately named:—clavicle, scapula, humerus, radius and ulna; sternum and ribs; innominate, sacrum, femur, tibia and fibula. The pelvis is larger in women in order to facilitate delivery. True, false and floating ribs are not distinguished. There is one less in the male as a result of a rib having been taken from Adam in order to create Eve. The individual carpal and tarsal bones are not separately named. Distal to them are short long bones with prominent ends.

Joint surfaces, which are smooth, are composed of a substance similar to bone, but softer. Round each joint there is a tough membrane, within which is a more delicate one enclosing a fluid of unknown function. Tendons and ligaments, which are not distinguished, limit the range of movement. Although it is thought that in pronation and supination the radius and ulna move together, on the whole, range and type of movement of the larger joints are accurately described.

The muscles tighten and swell when producing movements, which would otherwise be impossible. The pull is transmitted to the bones through cord-like structures. Some muscles, such as those which close the eyes, are connected with structures other than bone. Except for the biceps, individual muscles are not distinguished, but there is a general appreciation of the action of groups; for instance, those behind the upper arm straighten the elbow. The size of muscles is proportional to their strength; with disuse wasting occurs. They have a good blood supply and are variously described as being responsible for formation or nourishment of the blood. Since a man with good muscles is well in himself, they must play a part in maintaining the *ruhch* in good condition.

Food is essential for life, total deprivation resulting in death after a minimum period of ten days. Chronic under-feeding leads to feebleness and swelling of the legs. Milk is the only food which by itself can sustain life. A diet of meat alone is liable to cause stomach upsets. Water deprivation causes death in less than a week, its importance being increased during hot weather and when diarrhoea is present.

In the mouth, which communicates with the nose and ears, the teeth, aided by the tongue, break up the food, which is moistened by saliva produced in the part of the mouth nearest to the angle of the jaw. Its formation depends on an adequate fluid intake. The flow, which is not

continuous and lessens during eating, is brought on by sight, smell and thought of food, and by gastric disturbances. Saliva is regarded as a food and must not be swallowed during Ramadan. The gullet leads from the throat to the stomach, a large hollow organ in the upper left side of the abdomen. This communicates with the intestines which lead eventually to the rectum and thence to the anus. The walls of the stomach are capable of movement and there, as is known from inspection of vomitus, the food is altered in colour and converted into a mixture of solid and liquid. The latter is absorbed by the stomach and intestines, and the former, after storage in the rectum, is excreted. No distinction is made between the small and large bowel.

The liver, which is a large reddish-black structure in the upper right side of the abdomen, consists of clotted blood and is connected in some way with the liquid portion of the intestinal contents. The gall-bladder, situated on its under surface and communicating with the intestine, contains bile which keeps the liver warm. No function is attributed to the pancreas. The spleen, which is situated under the diaphragm on the left, does not have an importance comparable with that ascribed to it by the humoral system, possibly on account of the comparatively low incidence of splenomegaly.

The kidneys are pale red organs situated in the back and connected with the bladder, a hollow organ in the pelvis. A channel leads in the male to the external meatus, in the female to an orifice in front of the vagina. Urine is formed directly from water subsequent to its absorption from the intestine, the blood playing no part in its production. The amount formed is related to the fluid instake and is reduced when perspiration is profuse, although sweating is regarded as a means of ridding the body of excess water and not as a mechanism for producing cooling.

The heart is a hollow organ in the left side of the chest, whose beating is palpable through the chest wall. It is normally faster in children than in adults and in the latter is accelerated by emotion, exertion and holding the breath. In accordance with Arab tradition, there are believed to be three hundred and thirteen blood vessels in the body. Veins and arteries are distinguished and separately named. When cut, the latter pulsate and spurt as a result of cardiac action. It is not realised that blood flows in opposite directions in the veins and arteries, and the concept of a circulation is unknown.

The amount of blood in the body is directly related to the well-being of the individual and is dependent on the state of his nutrition. Venous

and arterial blood are not distinguished. Following clotting, which takes place more quickly in the living than in the dead, a clear yellow fluid appears.

Voice production takes place in the larynx and is affected by a cold and the presence of a cleft palate. The thyroid cartilage is noted to be larger in men. A tube surrounded by discrete rings leads downwards from the larynx and dividing, enters the lungs. These expand with inspiration, sucking in air, which is then expelled without being altered in any way. The existence of the diaphragm is known, but no respiratory function is attributed to it, although the abdomen is observed to bulge during inspiration.

It is realised that breathing, like beating of the heart, is essential to life, and that loss of blood can be fatal, but there is no understanding of the function of the blood and of the circulatory and respiratory systems. No magical properties are attributed to blood.

The sex of the foetus is determined one hundred and twenty days after conception. Puberty comes at thirteen to fourteen years of age, breast development taking place about eighteen months before the menarche. The periods are usually regular, last about seven days and occur with intervals of three weeks, continuing until the age of forty. They are inflicted upon women as a punishment for Eve's sin in eating the forbidden fruit and tempting Adam to do likewise. The mouth of the womb is open during the four days following the end of the period and conception is most likely to follow intercourse during this time. There are special terms for the frenum, prepuce and external meatus. The testis and epididymis are distinguished, but the latter, like the scrotum, is not named. The mons pubis, labia majora and minora and clitoris are recognised. The vagina leads to the womb which is a hollow muscular organ. The uterine tubes are given the name *hedit*, which is applied to other tubular structures. The existence of the ovaries and the internal male reproductive organs is not known.

Semen is produced throughout the body, but especially in the lumbar region of the spine, since injuries to this area cause impotence. Conception follows the fusion of male and female seeds. The Somalis are aware of the resemblance of children to either parent, or even to grandparents.

Causation and Prevention of Disease

The techniques adopted by the Somali to prevent disease are based logically on his concepts of aetiology, which may be supernatural or

rational. Certain practices, usually looked upon as hygienic in nature, are carried out not for reasons of health, but for aesthetic or religious purposes. Others are apparently rational, but of very doubtful value.

All disease is sent by Allah to produce death and make possible the holding of man to account for his life on earth. Death is associated with a visit of the Angel of Death, who is sent by Allah and cannot be stopped. Illness may be a punishment for sin, but although a person guilty of neglect of parents is especially liable to be afflicted with small-pox, individual sins are not as a rule punished by specific diseases. Sterility, death during childbirth and loss of children are not consequent on sinfulness; indeed they may be sent to test the most virtuous. A variety of diseases is attributed to demons. Somali demonology is of Arab origin. The surface of the earth and vast hidden subterranean areas are inhabited by millions of demons owing allegiance to Iblis, who was cast out of heaven after refusing to acknowledge the authority of Adam. They may bite or enter into their victims causing, among other conditions, madness, epilepsy and deformities, or send a red wind which produces various inflammations. When a patient dies of one of these illnessess, the demon leaves the corpse in order to find a fresh victim, but there is no danger to the bystanders after exorcism by prayer. There is no exact system of classification and various diseases may be attributed by different observers to demonic or other causes. A person may be afflicted without human intervention or as a result of the action of a sorcerer whose identity is usually concealed, and who is approached through an intermediary. He may write the name of the demon and the victim together on a piece of parchment or use a fetish, which can be any common object. The demon is summoned by name, certain leaves being burnt at the same time. The wish that the victim should contract a particular illness is expressed to the fetish if one is being used. The latter may be hit if an injury is to be produced, or a part cut off in order to affect an equivalent mutilation of the victim, who usually has no knowledge of what is afoot. The tribe of the *Yebirs* is especially famed for its sorcerers. In order to protect the community, sorcerers, if detected, are liable to be killed immediately. Sheikhs can do this with impunity, but a lesser person may be the victim of demonic revenge. Protection is obtained by prayer and the use of amulets, which are commonly leather phylacteries about one inch square, held in position on the arm by a strap (see Fig. 2).

Congenital diseases and abnormalities are attributed to shocks or influences affecting the mother during pregnancy. The sight of a deformed

person is sufficient to produce the same condition in the baby. If the expectant mother cuts anything during an eclipse of the moon, the child is born with a cleft palate or harelip. Exceptions are congenital syphilis, which is associated with presence of the disease in the mother, and tongue tie, which follows failure to give alms to a *Yebir* upon the birth of a child.

Injuries, however caused, can produce long-term as well as immediate effects; thus muscle wasting often occurs after fracture of a long bone. Certain illnesses are due to old age and others come "by themselves." Malnutrition is recognised as a cause of some diseases and an aggravating factor affecting others, although little can be done in the way of prevention as supplies of food are scarcely adequate at the best of times and liable to be affected catastrophically by a failure of the rains.

Disease may enter the body through the skin, stomach and intestines, air passages or genitalia. Contagion is looked upon as the cause of some diseases, notably small-pox, tuberculosis and syphilis, although no method of spread other than direct contact is recognised. Insects are regarded as sources of certain diseases, rather than agents for man to man transmission, a matter of great interest when one recalls that malaria was reported to Swayne (9) as being caused by the mosquito several years before its role was established by Ross. Food and drink are judged by their palatability, and the gastro-intestinal upsets which follow eating anything which has commenced to putrefy are attributed to the direct action of bad food and not to anything transmitted. Dirt, uncovered dejecta and abundance of flies are not associated with disease. Incense is burnt to drive away insects because of the discomfort they cause rather than as a hygienic measure. Rules of personal cleanliness are based on Mohammedan law and are obeyed because of their importance as rites of purification. Similar concepts underlie the various taboos related to blood, such as the prohibition of intercourse during menstruation and the forty days following parturition. Discharges are not regarded as dangerous.

No attempt is made to avoid overcrowding. Victims of small-pox, leprosy and tuberculosis are isolated and looked after by relatives. In the case of small-pox, someone who has had the disease is chosen. When there is an outbreak, vaccination is carried out by placing some pus obtained from a pock on an incision made on the wrist. A mild attack, which confers immunity, results. Jacobs (6) in a survey of 1,000 subjects, found that 25.8% had been vaccinated.

Fig. 2.

Medicine

The medicine of the *wadad* is entirely empirical. There is some speculation about the changes underlying various diseases; e. g. typhoid is named *bogti alolshi*, literally "ulcer stomach," but, *post mortem* examination being forbidden, knowledge of pathology is confined to that which can be observed on the skin or other organs accessible to direct inspection. Consequently there is a tendency to confuse symptoms with diseases and to regard as one all affections of a particular system. As a result, the number of diseases recognised is small and differential diagnosis becomes greatly simplified. Thus, diarrhoea is due to dysentery, typhoid or tuberculosis. Jaundice is a disease in its own right, unless due to malaria or relapsing fever, or associated with chronic diarrhoea.

The patient is asked what the dominant symptom is, its mode of onset, duration and whether it is worsening or improving. Inquiries are made about associated symptoms, e. g. cough in a case with chest pain, and about previous illnessess where it is considered relevant. In cases of venereal disease, insanity and paralysis, a family history is taken. Inquiry is directed to possible "demon trouble," but no form of divination is employed. Apart from observing the general condition of the patient, inspection is confined to the immediately relevant data, such as the way of breathing in a chest case, or a rash when present. The temporal pulse is palpated and a hand laid on the forehead to gauge feverishness, or on the site of a local inflammation in order to assess the heat of the part. The examination is then at an end.

The symptoms of typhoid are weakness, fever, vomiting, diarrhoea and, occasionally, bleeding from the bowel. The patient, who recovers completely if he does not succumb in the acute stage, is given a liquid diet. At the onset of an attack of malaria the patient complains of a bitter taste in the mouth, shivers, vomits and develops a headache. Recovery after a few days is followed by one or more recurrences. When chronic, there is splenic enlargement, malaise, anaemia and wasting. Death in one to two years is frequent. Relapsing fever is caused by tick bites and causes headache, vomiting and high fever in attacks going on for several months or even years. Neck stiffness is regarded as a prominent feature, giving the disease its name and probably accounting for the tendency to confuse it with meningitis. There is no treatment. It is to be noted that louse-borne relapsing fever is not seen in Somaliland. Unless occurring in the course of typhoid or tuberculosis, all forms of diarrhoea,

including amoebic and bacillary dysentery, are regarded as one disease, whose symptoms are griping abdominal pains, passage of liquid and sometimes bloody stools, and on occasion, vomiting. It may prove fatal, become chronic, or be followed by complete recovery. An abscess may form in the anal region. When pain in the right side and jaundice appear, the disease always proves fatal. Cassia is given to wash out the gut. Two diseases which correspond to small-pox and chicken-pox are described and named *funto* and *hablobus* respectively. In both, fever is followed after four to five days by a rash which is at first papular and then pustular. In the severer *funto* pustule formation is marked, whilst in the milder *hablobus* the pocks contain a watery fluid rather than pus. There is some confusion of classification as severe cases of chicken-pox are regarded as *funto* and mild cases of small-pox as *hablobus*. The patient is isolated, kept warm, and put on a fat-free diet. Measles lasts about seven days, during which time there is fever, inflammation of the eyes and a rash which can be seen but not felt. The patient is treated in a similar manner but not isolated. Rabies occurs about forty days after being bitten by a jackal; it is not associated with dog bites as dogs are kept only by the Midgans. The affected person becomes mad and often violent, and dies in ten to fifteen days. An attempt is made to kill any jackal which has attacked a human being, but the disease, once established, cannot be treated. Mycetoma is attributed to the prick of a thorn. A lump which bursts discharging black particles appears on the foot, which is eventually destroyed. The abscess is opened up and dressings applied. Anthrax is contracted by contact with diseased animals, whose flesh should not be eaten, though normally animals are not examined for signs of disease when slaughtered, and are not otherwise forbidden on account of poor health before slaughter. An area of local inflammation is associated with high fever. The pulmonary and intestinal forms are not recognised. The patient, who is purged and poulticed with hot sand or ash, usually recovers. Leprosy follows contamination with the urine of a bird which is heard at night but never seen. Following a generalised swelling of the body, discrete lumps appear. They penetrate deeply and then burst, forming sores and ulcers. Parts of the fingers and toes may drop off. Death occurs in two to six years, but recovery is possible. Verses of the Koran are tied round the neck, but the victim, who is isolated, is not otherwise treated.

The different manifestations of malnutrition are not distinguished from each other or from other conditions producing similar outward effects.

A diet deficient in milk, meat and vegetables is known to cause *barasheh*, a generalised swelling of the body, in about six months. The same term is applied to the generalised swelling of the body from which the Mad Mullah suffered, although it was not thought that Mohammed bin Abdullah's diet was inadequate in any way! Bleeding gums and an ill-smelling mouth are attributed to undernourishment. The roots and leaves of the green pepper plant are curative.

The Arabs are blamed for the presence of venereal disease. Syphilis, gonorrhoea, granuloma, granuloma venereum and lymphogranuloma inguinale, though distinguished, are regarded as different manifestations of the same disease which may be caused by intercourse with an affected person, or between a healthy couple during menstruation. A penile sore, discharge, swelling of the inguinal glands or all three may appear. All genital sores are regarded as venereal. Recovery is usual, though extensive suppuration may occur. Subsequently, joint pains, testicular swellings, rashes and ulcers develop. Pain in the back and lower abdomen with frequency, strangury and chronic difficulty in micturating are always attributed to gonorrhoea, and myalgia to syphilis. The ulcers of yaws are regarded as due to syphilis, and inguinal swellings of venereal and non-venereal origin are often confused. Groin, neck and armpit swellings are seen to follow local sepsis. Children of syphilitic mothers may be normal or afflicted by the disease which, under these circumstances, causes depression of the root of the nose, bulging of the sides of the skull, ulcers in the mouth and snuffles. The children are ailing and die within a few years despite treatment. However, an infusion of myrrh boiled with meat and taken as soup is always curative in the adult. Certainly manifestations of tertiary syphilis are extremely rare considering the prevalence of the disease.

Heart diseases, which are rare in Somaliland, are not recognised. Thickening and tortuosity of the arteries in old age is regarded as normal. The common cold, sore throats and chronic bronchitis are regarded as one and treated with drinks of warm ghee, which is also dropped into the nostrils and ears and applied to sores at the angles of the mouth. Lobar and broncho-pneumonia are not distinguished. The patient becomes feverish and breathless and coughs with difficulty owing to sharp pain in one or both sides of the chest. After seven days, unless death ensues, there is rapid recovery. The patient is purged and burnt at the site of the pain (see p. 214 f.). All chronic coughs are grouped together as *gaho*, which is associated with expectoration, wasting and excessive sweating.

Late in the disease the voice becomes hoarse and terminally there is diarrhoea. The uppermost part of the epiglottis, the uvula and the tonsils are excised. The patient is given the fat of the best-fed camels and large quantities of camels' and cows' milk to drink. Empyema unassociated with trauma is not recognised. Wounds of the chest from which air escapes often become purulent, and cough with sputum and wasting follow. A good diet is important in these cases and the powdered roots of the unidentified verbenaceous plant *tireh* are applied locally. Asthma occurs chiefly in Somalis who go abroad, but they usually recover on their return. Camel meat fried in tail fat has a soothing expectorant action in these patients who are encouraged to exercise. The climate at Berbera is considered beneficial.

Anaemia, characterised by breathlessness and pallor of the nails and conjunctivae, may follow loss of blood or be associated with chronic sickness or undernourishment. It is treated with a rich diet including lightly cooked liver which is given as it is regarded as a form of clotted blood.

Herniae in men are regarded as swellings of the cords which pass upwards from the testicles. They occur when the muscles are relaxed and after falls. Blockage of the intestines causes constipation with sudden onset of vomiting and abdominal pain and swelling. The condition cannot be treated and death ensues in four to five days. Rectal bleeding and prolapse of piles result from constipation, disappearing when this is corrected. Varicoceles are not regarded as pathological. There is no treatment for varicose veins which appear in people carrying heavy loads and cause aching of the legs. Sudden swelling of the legs with red superficial cords is due to a red wind from the devil and is treated accordingly, though local applications are also used.

Apart from conditions with a highly characteristic appearance, such as ringworm and shingles, all skin diseases tend to be grouped together. The affected parts are usually kept scrupulously clean, though ringworm is treated with applications of camel dung.

Paralysis, partial or complete, occurs in elderly adults. There may be loss of consciousness and disturbance of speech at the onset. The affected limbs become stiff, and weak or powerless, but some degree of recovery is usual. The condition, which is due to a demon, is treated by warming the patient, rubbing olive oil on his limbs and hanging holy parchments round his neck or on the affected parts. Fits are due to demons and treated accordingly (v. inf.). Major epilepsy and hysterical

fits are not distinguished. Victims are looked after by their families and are not allowed to herd the camels.

Insanity is due to the *ruheh* being affected by a demon. The patient may become manic, disorientated or deluded, often along religious lines, thinking he is a demon, the Prophet, Allah. While senile dementia and the delirium of fevers are distinguished, their connection with damage to the brain is not recognised and other organic psychoses are not distinguished, nor are neuroses and psychoses separated. Somatic manifestations of mental disorders, e. g. hysterical weakness of a limb, are only recognised as such when there are overt features of mental disease. When a woman hears of her husband taking another wife she may " run amok," burning the tent and destroying his possessions. The condition is known by the Somali word for jealousy, but is regarded as a disease, although adequate attentions on the part of the husband usually bring about a cure! Violent patients are tied up, but restraint is generally avoided. The usual treatment for demonic diseases is given and inhaling of incense considered valuable, although it may take several years to bring about a cure. In addition, special dances take place. Whilst a drum is beaten rhythmically, two or three people of either sex leap up and down repeatedly, separating their feet and bring them together again. They circle round the sick man in this fashion whilst one of their number chants repeated exhortations to the demon to leave his victim. A larger group, forming an outer circle, clap their hands and cry *hè hà* as a chorus. The dance continues, for several hours if necessary, until the patient falls to the ground in a trance. On being sprinkled with water he wakes cured and greets the company, who return his salutation.

There are a few conditions described which do not fall into obvious categories of disease. *Burbur* is produced by excessive horse riding. The insides of the thighs become bruised and the skin peels. *Kadiassu* is caused by walking barefoot in the sun. Painful swellings appear in the groins, the urine becomes red and micturition painful. The symptoms disappear in a few days. *Chachaleh* is characterised by generalised muscle and joint pains, slight oedema, dyspepsia, paraesthesiae and " burning feet." Buchanan (12), from a consideration of the diets of the patients and their response to administration of yeast and onions, concluded that vitamin B deficiency was the cause. The condition in large measure resembles dry beri-beri and the " burning feet " recalls the similar symptom occurring among prisoners of war in the Far East and attributed to pantothenic acid deficiency. The term *chachaleh* is also used onomato-

poeically for any condition treated by burning, as the hissing noise of the cautery being applied to the skin resembles the first two syllables.

Therapeutics

Rest is essential when a serious illness is being treated. A limb which is the seat of local disease is immobilised. An invalid is kept on milk, boiled rice being added to his diet as recovery begins, and a normal diet resumed with convalescence. Verses of the Koran are read, Sura Yasin being especially efficacious. If the disease is confined to a particular organ, verses are shouted down a tube, the end of which is placed against an adjacent skin area. These measures are especially effective in diseases due to demons. Burning, carried out with a red hot iron rod mounted in a wooden handle, is practised in order to cause demons a degree of discomfort sufficient to make them leave their victims and to provide them with a means of egress. The burning may be general or confined to a diseased area, no constant pattern being produced.

Bleeding is employed for general malaise and usually practised at the time of the new moon, four or five cuts being made and suction applied through a cow's horn, or by applying a container heated from inside. A considerable negative pressure develops with cooling. The treatment is applied to the back of the neck or locally when appropriate.

Rags soaked in boiling water are used for poultices and crushed croton leaves for counter irritation. Tea and coffee are taken for their stimulant effects. Tobacco is smoked in Arab fashion for its soothing action. Khat is taken for the feeling of well-being and the pleasurable dream state which it produces, and is not considered harmful, but alcohol is not drunk. Myrrh taken in water has a hypnotic action lasting about half a day. The roots of the unidentified plants *tireh* and *barada* are used as expectorants and aperients respectively, whilst honey in ghee and ginger are given to sooth coughs. The waters of Ainabo, found by the Government analyst (*7*) to contain 192 parts per 100,000 of sulphate, are drunk for their purgative action by the surrounding peoples. Aloes, cassia and mineral oil are among other cathartics prescribed, but enemata are never given. Purgation is employed not only for constipation, but also in the treatment of anorexia and most acute illnesses. Rice boiled in sheep's milk and millet cooked in water help to stop diarrhoea. Ghee soothes inflamed throats and is valuable for gastric disturbances. Peppermint water is given to relieve griping. The crushed roots of Iphiona rotundifolia impart a sour taste to tea and milk, and are used as a stomachic, whilst

Phyllanthus roots, containing tannic acid, are of value in urinary tract disturbances. These symptomatic remedies are often dispensed by relatives of the patient without consulting the *wadad*. There is no real regulation of doses, though children are given smaller quantities than adults.

Surgery

The scope of surgery is limited by ignorance of pathology and, to a lesser extent, by lack of sufficiently developed techniques. Ritual operations are performed by Midgans, who also practise throat surgery, the latter being the only sphere in which operative treatment for *disease* is carried out. The greatest developments have been in the field of traumatic surgery. This is not confined to Midgans. Indeed the chief source of information on this subject was a member of the Eidegalla tribe.

The instruments are of iron with wooden handles, and are either constructed by Tomals, or nowadays obtained from European sources. They include variously shaped knives, forceps, gimlets and scissors. The operator washes his hands before starting a "list," but not between individual operations. Haemostasis is secured by pressure dressings and incisions are covered with myrrh. Thorns are used as needles and various vegetable fibres for stitching. There is no form of anaesthesia. When the patient is seriously ill, operation is postponed.

Wounds are washed after removal of obvious foreign bodies and haemorrhage arrested by plugging with acacia roots. They are then dressed with bark and covered over, the dressings being changed at least daily. Bdellium is used to draw abscesses, boils, carbuncles, chronic sinuses and tropical sores, which are dressed with bark after being incised. Snake bites, if untreated, are followed by pain and local swelling, vomiting, loss of consciousness and death in a few hours. A ligature is applied proximally and the wound incised and packed with salt. Lizard bites cause swelling of the tongue and throat with difficulty in speaking, but as recovery always takes place, treatment is unnecessary. Areas of erythema produced by burns are dressed with sugar; blisters are peeled off, anointed with oil and covered with a white cloth.

Trepanning is performed solely in the treatment of injuries and is not associated with the need to release demons. Depressed fractures of the skull are usually obvious, but the presence of blood within the cranium requiring evacuation is diagnosed on a history of injury and the presence of sleeplessness, giddiness and continued pain in the affected area. The operation is performed as soon after the accident as possible. An incision

is made as near to the site of the injury as practicable and the cut edges held apart by threads passed through the adjacent skin. The two layers of bone and the soft zone between them are scraped away and the fibrous membrane attached to the underside of the bone incised. The head is tilted so as to drain away all unclotted blood. Detached pieces of bone are removed and, by means of a hook, depressed bone is elevated. If this proves impossible through the opening in the skull already made, the operation is repeated elsewhere. The meningeal layer of the dura is never incised. If laceration of the brain is discovered when the skull is opened, further proceedings are abandoned. Bleeding from the ears and compound fracture are not, however, contraindications to operation. The bone round a simple crack is excised. Leaves are used to dress the wound, which is not stitched.

Fractures, simple or compound, may be due to direct or indirect violence. In compound fractures loose pieces of bone are removed and the wound washed and dressed with leaves or ghee, but treatment is not otherwise affected. Reduction is produced by traction, an assistant pulling on the affected limb whilst the principal makes adjustments at the site of the fracture. Where this method cannot be applied, e. g. where a humeral epicondyle is involved, an attempt is made to manoeuvre the fragment into position. In the case of femoral fracture, traction is applied to the legs and armpits in opposite directions, and the final position maintained by tying the patient to stakes driven into the ground. A fractured pelvis is treated by sitting the patient upright in a hole in the ground, pieces of wood being pressed into his flanks.

Immobilisation is obtained by use of splints of leather or padded wood. If necessary they are cut to enable a wound to be examined. Splints are removed about once a fortnight, being re-applied if union has not taken place. The clavicle is immobilised by placing the arm in a sling, the humerus by tying the arm to the side and the jaw by splinting along the sides and tying a bandage right round the head. Fractures of the spine with survival are not seen. Dislocations are not distinguished from fractures except in the case of the shoulder joint. This is reduced but not splinted subsequently. Massage is employed to prevent wasting and exercising encouraged in order to overcome stiffness. Good results are common, although disabilities due to imperfect union are seen.

Circumcision is performed at the age of seven "because the religion commands it," no other explanation being offered. The prepuce is pulled forward and passed through a loop fixed to the end of a stick. A single

incision is made proximally. Healing is complete in seven days. The frenum is cut as a treatment for general malaise.

Linear incisions are made in the tongue for general malaise and cough. Tonsillectomy is performed for general malaise with anaemia, or when the tonsils are large and protuberant as a result of local disease. The tongue is pulled forward and depressed, and the offending organs cut off with a knife, a single incision sufficing. As among the Gallas, the uvula is removed for any affection of the chest or throat. The operation is only performed when it has become grey instead of red as a result of disease. The uvula is fixed with a loop and cut off. The uvula in the Somali is often very long, even touching the tongue, and it is possible that the operation removes a source of irritation. Jacobs (6) in the course of a survey of a large number of cases, found that the uvula had been removed in 38.5%. The uppermost part of the epiglottis is cut off for similar reasons. Its free end is gripped with forceps and a horizontal incision made. Gargles are given after all throat operations and healing is complete in seven days. The writer was assured that a complete cure was always obtained. These claims were not substantiated, although inspection of the throats of Somalis who had had one of these procedures performed never showed any gross scarring or deformity to suggest that something serious had gone amiss. The reasons for selecting any one of these four operations were not always clear.

The term *bokr* is used to describe any inflammation or painful condition of the eyes. Dust or dirt in the eyes causes the lids to become sticky and the eyes themselves to become red and painful, especially in bright light. The eyes are washed with dilute salt water and an infusion of aloes instilled. Black antimony (the sulphide) is also used and a silver stick wiped along the underside of the lower lids. Cataract was treated by itinerant Sudanese who needled the black part of the eye and let out some fluid. There was temporary benefit, but after a few days the condition usually worsened. The practice has died out of recent years and it was not possible to obtain any first hand accounts. The Somali does not distinguish between the iris and the pupil. Indeed, owing to the heavy pigmentation of the former it is extremely difficult to do so, and it is therefore not possible to say where the needle was inserted or whether the lens was dislocated. When the cause is not obvious, blindness is regarded as a demonic disease.

Drops of oil or ghee are inserted into the ears when wax is present and warm garlic in ghee is used for earache. Severe earache, often associated

with loss of hearing, is relieved by "bursting of the ear," with purulent discharge. The process can be hastened by instillation of garlic in ghee.

The first set of teeth commences to appear in the first year and is shed by the age of ten. The second set, which is irreplaceable, consists of thirty-two teeth. The incisors and canines are separately named, but the premolars and molars are not distinguished. The first two groups each have one peg and the last two groups two or three pegs which fit into sockets in the jawbones. The teeth are frequently washed, brushed and rubbed with acacia gum, toothpicks being universally used. Toothache is relieved by oil of cloves. Teeth are extracted by direct violence or by traction on a loop tied between the crown and the gum.

Gynaecology and Obstetrics

Although gynaecological practice is entirely in the hands of women, usually Midgans, problems affecting the generative system are discussed freely between the sexes. A Mullah called upon to provide an amulet in order to cure a menstrual disturbance is informed fully about the nature of the disease which he is being asked to treat.

All forms of menstrual disturbance occur. The periods may be scanty and infrequent, or, apart from pregnancy, completely absent on account of tuberculosis, chronic malaria, anaemia or malnutriton, or without obvious cause. *Tireh* with ghee or mutton fat is given. Excessive and unduly frequent periods are considered to be caused by weakness of the womb. Although no function is attributed to the uterine tubes, some abnormality in them is thought to cause dysmenorrhoea. The patient rests during her periods and is given the gum *habab agagi* to drink. The pains, which may be present before or during menstruation, are relieved by hot compresses applied to the abdomen. Vulval ulcers and purulent vaginal discharges are attributed to venereal disease and are treated by local applications of cassia bark. Perineal pain and watery vaginal discharge may be due to the womb, which can normally be felt in the front of the vagina, being displaced backwards by a fall. After manual replacement the patient lies on her face for two or three days. Nothing is inserted vaginally to maintain the new position of the uterus. Prolapse, which occurs in the elderly, is treated by manual replacement followed by cutting strips from the sides of the vagina and bringing the cut edges together with thorns, so that the vaginal orifice is reduced to pencil size.

Sterility may be due to any chronic disease or occur without obvious cause. *Tireh* roots are placed in the vagina, being left until they are

spontaneously discharged. A diet rich in fat is of value and almsgiving desirable.

The feature of Somali medicine showing closest affinity with that of other Hamitic peoples is the practice of infibulation. It is also the most outstanding difference between Somali and Arab practice. Only a brief account is given as it has been adequately described, notably by Roheim (8) as a prelude to a discussion of the underlying psychological motives. The operation is carried out by a Midgan woman shortly before the menarche. The clitoris and labia minora are excised and the raw edges brought together with thorns, an orifice the size of a pencil being left posteriorly for the menstrual discharges. The wound is dressed with gum, the thighs tied together and the patient kept in a sitting position for a period of three days, at the end of which the thorns are removed. The vagina is re-opened by the husband immediately after marriage, the wound being dressed with olive oil. Intercourse takes place immediately afterwards despite the pain. The vagina is sometimes re-sutured early in pregnancy and is incised at the onset of labour. The vulva of a widow or divorcée is allowed to remain patent. Sepsis is common, but in cases examined subsequently by the writer, healing was satisfactory. The importance of the hymen is lessened by the practice and no examination of it is made at the time of marriage, absence of signs of interference with the operation scar being taken as proof of virginity. When imperforate it is incised immediately after opening up the vagina. Libido is retained and the practice is justified by the need to protect young women when they are sent to fetch water, or are away from their menfolk whilst pasturing the livestock. It is certainly common to see women alone in the bush herding the flocks, and in the lawless era preceding the establishment of effective government in the interior, it may well have been a means of preventing violation of young girls.

Pregnancy is suspected when the periods stop. Craving for unusual foods is common. The breasts swell and the areolae darken. Morning sickness may occur in the first trimester and frequency in the last. Light streaks appear in the skin of the abdomen, which starts to enlarge during the fourth month, at which time the womb becomes palpable. Foetal movements are first felt at one hundred and twenty days. There is no form of ante-natal care. The woman works until the onset of her pains and, when labour is uncomplicated, returns to normal activity almost immediately afterwards.

Any disease present coincidentally is worsened by pregnancy. Excessive

vomiting in the early stages can produce prostration and even death. Verses of the Koran are tied round the neck of the patient, who is kept on a diet of milk. Just prior to delivery generalised swelling of the body with convulsions may occur and prove fatal. The condition is due to too little urine being passed and cannot be treated. The symptoms produced by an ectopic pregnancy are described without the cause being appreciated.

Natural abortion, unless caused by falls, carrying heavy loads or the presence of chronic disease, is attributed to weakness of the womb. The same factors can produce vaginal bleeding during pregnancy. The patient, who is considered liable to abort, is rested and given myrrh to drink, whilst verses of the Koran are tied round her neck. A miscarriage may be produced deliberately by drinking mineral oil or large quantities of myrrh, massaging the abdomen vigorously with coconut oil, inserting bark into the vagina, or a horn or needle into the uterus. The latter method is the most certain but it may be complicated by purulent vaginal discharge and fever or haemorrhage, either of which can prove fatal.

Labour may last the greater part of a week, although half a day is more usual. Abdominal and back pain is followed by slight vaginal bleeding. When the membranes rupture, the patient is seated upon a stool with her back supported and her legs apart and the midwife places herself between them, having first washed her hands. The head, which usually appears with the occiput towards the pubis, is extended, and the shoulders then drawn out, no intra-vaginal manoeuvres being performed. Delivery is less easy when the head faces towards the pubis and even more difficult when the brow presents. When there is a breech presentation, a finger is placed in the baby's groin, the legs drawn down, and when the head appears the child is gently rocked backwards and forwards. If a hand appears it is replaced and the midwife, inserting her own hand into the vagina, attempts to turn the baby so that the head is delivered first. Other presentations are not described, or recognised as causes of obstructed labour. Delivery of the afterbirth, the function of which is nourishment of the foetus, is not assisted, but if on inspection it is not intact, a hand is inserted into the vagina to remove any fragments. The placenta is discarded, no special properties being attributed to it. The cord is ligated and tied about two inches away from its attachment at the umbilicus. The mother is bathed at the onset of labour and after delivery of the placenta. No analgesics are used and no male is allowed to be present.

Tears, which are exceptional, are repaired with thorns. If they become infected the woman stands astride a low fire for long periods. When obstructed labour is due to an excessively small pelvis, no treatment is possible. This is especially liable to happen when conception occurs shortly after the menarche.

Obstruction is relieved by making lateral cuts in the vagina, which is afterwards repaired with thorns. The foetal head is cut, gripped with the hand and pulled out when it is unduly large and causes difficult delivery. Twins do not present special problems. The diagnosis is made before labour, the abdomen being abnormally large but hard, in contrast to the soft enlargement produced by excess of water in the womb. If the mother dies during childbirth, Caesarean section is performed. On occasion lower abdominal pain and fever occur post-partum, especially after interference, and may prove fatal. The patient is put on a diet rich in fat and given an infusion of cassia. Heat is applied to the lower abdomen, which is frequently washed. Acute inversion is treated, usually successfully, by manual replacement, the patient being held upside down.

Paediatrics

The new-born baby is light in colour. It is cleaned and its limbs rubbed with ghee. Though it may be either wrapped in a cloth or left naked, care is taken to keep it warm. In order to reduce the caput and the moulding, both of which are most prominent after a difficult delivery, cloths are wrapped round the head and direct pressure applied. Hot cloths are wrapped round the cord to dry it, and when it separates the wound is dressed with black antimony. Fomentations are applied if there is umbilical sepsis. Umbilical herniae often develop, disappearing after a few years. Like polydactyly, they are regarded as signs of good luck. Napkins are not used, the buttocks being wiped with bark. Girls are breast fed for one year, boys for two. Whenever the child cries, it is fed and then held up to help it break wind. If too weak to suck, breast milk is expressed and given with a spoon. When lactation is poor, the mother drinks large quantities of milk. Wet nurses are never employed, but the baby's feedings are supplemented with cow's, goat's or camel's milk to which ghee has been added. When the child is weaned, or if it dies, the mother's fluid intake is restricted and her milk expressed in order to relieve tension in her breasts.

Absolute constipation from birth may be due to the anus being occluded by a membrane, which is incised. The more common form of constipation

is treated by inserting salt into the rectum; and diarrhoea by giving sweet, milkless tea. If there is a severe, long continued digestive upset, possibly associated with passage of curds, the abdomen is burnt. For vomiting attributed to inability to digest milk, an infusion of the leaves of *Crossandra nilotica* is given and a watery extract of various leaves placed on the head. Teething troubles cause peevishness, sleeplessness, excessive crying, vomiting and diarrhoea. The gums are rubbed with honey.

The child is trained to micturate and defaecate after feedings and can usually control his bowels and bladder when a little over a year old. Enuresis, regarded as a form of childishness rather than as a manifestation of disease, is treated by burning in the middle of the lumbar spine. Nothing more is done if this proves ineffective as the condition usually clears by itself. Failure to walk by the end of the second year is treated, always effectively, by removal of the eye teeth. The various diseases of adults already described are not considered to have special features when occurring in children, and are treated by ***wadads*** in the same way. The more obvious congenital abnormalities are recognised, and, as already mentioned, most are attributed to influences acting on the mother during pregnancy, the period immediately after conception being considered especially dangerous. An exception is paralysis of an arm, which is thought to be caused by an injury sustained at birth. No treatment is given for these conditions.

Forensic Medicine and Toxicology

The tradition of lawlessness and resulting lowered significance attached to violent death lessen the importance of establishing the mode of dying and the need to observe the phenomena which follow death. The ***ruheh*** departs from the body, first leaving the feet and finally passing out through the vertex. Cooling commences in each part immediately the ***ruheh*** has left it. Stiffening of the limbs occurs transitorily and is followed by putrefaction, though if there is much loss of blood when death occurs and the body is exposed to the sun, it may become dried up but otherwise preserved.

When a body is found and there is no sign of violence, no action is taken. If the face is unrecognizable and there are no gross signs such as a missing finger, identification is not possible. Wounds, if in a vital area, are assumed to have caused death. Much bruising round a small cut suggests that a blunt instrument has been used, sharp ones producing

clean incisions. Bullet wounds are easily recognized. It is not possible to tell whether a wound was inflicted before or after death, or occurred as a result of accident, suicide or homicide. Infanticide is said to be rare and post- and pre-natal deaths are not regarded as distinguishable. Blood is seen on the vulva when death follows abortion.

Blood money is paid in camels, the amounts being standardised. The description of injuries for compensation purposes is simple, and problems of assessing disability hardly arise. Wounds, according to Drake-Brockman (3), are classified as follows:

(1) Causing loss of blood.
(2) Occurring in a limb and causing wasting, loss of function of both.
(3) Resulting in loss of a member or organ.
(4) Penetrating thorax or abdomen.

Five camels are paid for a scalp wound exposing bone, ten for a depressed fracture of the skull, one hundred camels for killing a man, fifty for killing a woman, and so on. When necessary for legal purposes, the perineum is examined by an old woman appointed by the Cadi. In a case of suspected rape of an unmarried woman the presence or absence of recent incisions in the vulva is noted. When failure to consummate is alleged, attention is paid to the state of the hymen. When a husband is accused of impotence the marriage is set aside unless he can prove his potency with a second wife.

A large number of plants are known to be poisonous, causing death in cattle which graze on them, and, on occasion, human fatalities. Some have not been identified and in others the active principle has not been isolated. The berries of *Withania somnifera* and the fruit of various species of Euphorbia are often eaten by children in which they cause severe gastro-intestinal upsets. The Somali name for *Adenia vitifolia* is " Children Killer " on account of the highly poisonous nature of the fruit. *Datura stramonium* and other plants containing the hyoscyamine hyoscine group of alkaloids likewise often cause fatalities. Arrow poisons, whose active principles are cardiac glycosides, are used by Midgans when hunting animals, and in the past members of other tribes used them against Midgans. They are prepared by cooking the roots of *Acocanthera schimperi* and *Adenium somalense* together for several hours. Secret poison societies do not exist and poisoning is not used for homicide, partly, apparently, because the use of violence is held so lightly, and partly because the commonly known poisons, when given by mouth,

have powerful immediate actions on the gastro-intestinal tract and could not be administered secretly. Arsenic has been introduced recently, and is used to combat locusts, but has not become widely known as a homicidal poison.

Discussion

In this account Somali medicine has been described from the point of view of the native practitioner. Explanations, for the most part, are those which he has given. Except where necessary for clarification, no attempt has been made to describe the natural history of disease as it occurs locally or to assess its incidence.

This work is of the nature of a preliminary survey as the brevity of the writer's stay in the country necessitated dependence on interpreters and reliance in large measure on accounts given by the various practitioners, rather than on direct observation of their handling of cases. The Somali's desire to appear knowledgeable tends to make him a rather unreliable witness, but to some extent this source of possible error was overcome by cross checking, which was done with special care when the information obtained seemed to indicate an unexpected depth of knowledge, as in the description of the relationship of secondary to primary syphilis. An unavoidable difficulty is the liability of the investigation to alter that which is being investigated, and it is possible that to some extent questioning tended to clarify the thoughts of the informant, or to centre his attention on matters which he had not previously considered. Study of the terminology employed was useful on occasion. Thus, at one time it was doubted whether anaemia was really recognised, since it is impossible to detect pallor in the skin of a people as dark as the Somalis. The use of the word *luho* meaning "pale" to describe a condition characterised by breathlessness, pallor of the nail beds and conjunctivae helped to dispel this doubt. Other examples have already been given.

This account gives a somewhat exaggerated impression of uniformity of thought, knowledge and practice. Differences between the methods of one *wadad* and another, or between one surgeon and another undoubtedly exist. Although there are barriers created by the tribal system as well as individual variations, several factors tend to make for uniformity of medical practice, certainly among Northern tribes of the interior. There is considerable overlap of tribal grazing areas with chances to intermingle during wanderings. Intermarriage between members of tribes provides opportunities for exchange of ideas. Such Arab influence as exists away

from the coast has spread fairly uniformly. The Mullahs, as already mentioned, live in collective settlements and their members are drawn from many tribes. The surgeons and midwives are usually members of the one outcast tribe—the Midgan. All groups in the region have access to the same medicinal plants. The centres in which the investigation was carried out are well away from the ethnic frontiers. It is therefore unlikely that a one-sided picture was obtained because of local variance resulting from assimilation of the practices of neighbouring peoples.

Some of the materials used, such as mineral oil for purgation and cloths for covering dressings on wounds, suggest recent European influences, although these do not seem to have produced appreciable changes in ideas or techniques. It is most unlikely that culturally the country remained completely static in the period between the adoption of Islam and the establishment of Colonial rule, and some Western concepts may have reached Somaliland indirectly during this time. It would seem, however, that Somali medicine consists mainly of features imported from Arabia and adapted to local conditions and organisation. The extent to which Hamitic features have survived is impossible to gauge without a detailed comparison with the medicine of neighbouring African peoples, and this will not be possible until the Gallas and Danakils are adequately studied. A comparison with Paulitschke's (*2*) description of Harari medicine reveals few similarities, and practices which were common to both peoples were universal ones. If it were possible to identify the aboriginal features more completely, the remaining aspects should throw considerable light on Arab medicine as it existed in the seventh century. The separation of the Semitic from the African components of Somali medical practice should therefore prove a useful field for further research.

Acknowledgements

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REFERENCES

1. Paulitschke, P. *Ethnographie Nordost-Afrikas*, die materielle Cultur der Danakil, Galla und Somal. Berlin, 1893-96.
2. Paulitschke, P. *Beiträge zur Ethnographie und Anthropologie der Somâl, Galla und Harrarî*. Leipzig, 1886.
3. Drake-Brockman, R. E. *British Somaliland*. London, Hurst and Blackett, 1912.
4. Westermarck, E. *Pagan Survivals in Mohammedan Civilisation* (*Morocco*). London, Macmillan, 1933.
5. Harley, G. W. *Native African Medicine*, with special reference to its practice in the Mano tribe of Liberia. Oxford, University Press, 1941.
6. Jacobs, L. Medical Survey Unit Report. No. 7.
7. East African Industrial Research Board. Analysis of Somali Water. General Survey. Burao.
8. Roheim, G. National Character of the Somali. *Int. J. Psycho-analysis* (1932) XIII. 199.
9. Swayne, H. G. C. *Seventeen Trips Through Somaliland*. London, Rowland Ward and Co., 1895.
10. *Encyclopaedia Britannica* (1928) XX. 965.
11. Kirk, J. W. C. *A Grammar of the Somali Language*. Cambridge, University Press, 1905.
12. Buchanan, J. C. R. "Chachaleh," common disease in British Somaliland and its relation to tropical deficiency diseases, *Trans. R. Soc. Trop. Med.* (1932) XXV. 383.

References 6 and 7 may be consulted in the files of the Medical Department of the British Somaliland Government, Hargeisa. The botanical names for the plants referred to in the text were obtained from a key compiled by Dr. P. E. Glover and kept in the office of the Department of Agriculture of the British Somaliland Government, Hargeisa.

APPENDIX

Glossary of Somali Medical Terms

No attempt has been made to make the list comprehensive. It is designed primarily to illustrate the amount of detail known and the methods of description employed. Terms used for instruments, medicines and treatments, *inter alia*, are not included. Suffixes are only added where syntactically necessary in phrases. The Midgans, speaking their own secret dialect, have their own medical terms, but use Somali when conversing with persons not belonging to their tribe.

(M) Midgan.
*Word of Arabic origin.

Literal meanings are given in brackets. Orthography after Kirk (11).

**Ruhch*: Spirit of life diffused throughout the body.

Khulbi: An intangible soul substance essential for life, situated in the left side of the chest.

Wadad: Mullah. Extended to mean "doc-

tor" and applied equally to one who can read the Koran and to Midgan "doctors" who are usually illiterate.
**Shaitan*: Demon.

Laf: Bone, skeleton.
Arjo: Cartilage.
Log: Joint.
Wéék: Hip joint.
**Hilib*: Muscle. Meat.
Burò: Biceps (the only individual muscle named).
Haid: Fat. Omentum.
Sàn, Hurig: Skin. Latter also used to describe scrotum.

Mudukh: Cranium. Skull.
Dumunka hòs: Lower jaw.
Dumunka sare: Upper jaw.
Han: Anterior fontanelle.
Dan: Zygoma.
Lugunta: Foramen magnum.
Deg arada: Mastoid process (behind ear).
Adahh: Backbone.
Afuen: Spine of seventh cervical vertebra.
**Fèda*: Rib.
Marcs: Clavicle.
Garabi: Scapula.
Ud: Humerus.
Kolki sare: Radius (top bone).
Kolki hòs: Ulna (bottom bone).
Lafohi ga'anta: Wrist bone or hand bone.
Miskah: Pelvic girdle.
Laf dumuk: Sacrum.
Dabad ilif: Coccyx (end projection).
Miskahti dolol kedr: Obturator foramen (hole in hip bone with meat).
Bodada: Femur.
Kuranku: Patella.
Kolki hore: Tibia (front bone).
Kolki dambe: Fibula (rear bone).
Lafohi agti: Foot bones.

Wadna: Heart.
Halbole: Artery (much blood coming).
**Howlal merid*: Carotid or a main artery of a limb (main—dangerous).
Wodijin, Tuman: Jugular vein.
Dig: Blood.

Khunchit: Lymph gland.
Khunchit fadoli: Swelling of lymph gland (anywhere and of any actiology).

Arab: Tongue.
Làba arabòhi: Sublingual folds and papillae (two tongues).
Irid: Gum.
Ilig: Tooth.
Forlasha: Medial incisor.
Dolaha: Lateral incisor.
Mééyah: Canine.
Goshè: Molars and pre-molars (grinding) (*sare* and *hòs* are added to denote the upper and lower teeth respectively).
**Sus*: Decayed tooth.
**Damhark*: Bony palate.
**Dalgala*: Soft palate.
**Hilib dulka*: Uvula (meat hanging).
**Ugugi*: Epiglottis.
**Hokud*: Tonsil.

Il pl. *Indohi*: Eye.
Indala: Blind.
Ilki ilshi: Pupil and iris (black part of eye).
**Heribaha*: Caruncle.
Ilshi haid: Retro-orbital fat (fat of eye).
**Bokr*: Any inflammatory condition of the eyes.
Dulud: Cataract.

Deg: Ear.
Degti yercid: Tragus (small ear).
Degti girgi kedr: Helix.
Degti gudehti: External auditory meatus (hole of ear).
Dääsha: Lobe of ear.
Deg hanòn: Earache.
Dukai: Wax.
Degala: Deaf.

Hungurì: Long tube. Oesophagus. Throat.
Alòl: Stomach. Abdomen.
Mindero: Intestine.
Kubo: Caecum.
Malawid: Rectum.
Bèr: Liver.
Madô biyo (M): Liver (*Madô biyo* = black water in Somali).

Hamai: Gall bladder.
Haid 'ad: Pancreas (white fat).

Gumboru: Mons pubis
Kintir: Clitoris.
**Sil*: Labia.
**Bikr*: Hymen.
Hedit: Any tubular structure. Uterine tubes. Probably includes ligamentous attachments. Superficial veins.
Rimai: Site of female seed. Outside the uterus but not otherwise localised.
Minka: Uterus.
Minka ilmhu galal: Gravid uterus (womb with little child inside).
Chachubo: False labour pains.
Urdò: Child delivered by Caesarean section (cut out of stomach).

Gus: Penis.
**Ib*: Meatus.
Fanja: Glans.
Buryu: Prepuce.
Huniyo: Testicle.

Rahadi: Misfortune. Disease.
Shush: Foul fiend. Dread disease.
Rùfsan (M): Be poor. Sick.
'Ajis: Laziness. Malaise.
Indohi alaula: Yellow eyes. Jaundice.
Murk: Muscle pains.
Dùùr: Bile. Digestive upset.

Gushushud: Malnutrition (poor people's disease).
Bararsha: Any disease producing diffuse swelling. Includes hunger oedema and wet beri-beri.
Uho: Anaemia (pale).

Bogti alolshi: Typhoid (stomach ulcer).
Kaneow: Mosquito. Malaria.
**Orgui*: Stiff neck. Relapsing fever. Meningitis.
Däowo wallan: Rabies (jackal mad).
Hundur: Diarrhoea. All disease in which diarrhoea is a dominant symptom.
Jidam: Leprosy (a dropping off).

Fèèh: Protrusion. Mycetoma.
Furuk, Funto: Small pox. Haemorrhagic chicken pox.
Hablobus: Chicken pox. Variola minor.
Majino: Mumps. Any other swelling at the angle of the jaw.

Dùri: Bronchitis.
Hèèk: Tiredness. Asthma.
Geniwaren: Pneumonia (broncho- or lobar) Pleurisy.
Gahò: Tuberculosis. Any disease with cough and wasting.
Doäg: Infected chest wound.

Habad: Syphillis.
Habad gubuda: Yaws (old syphilis).
Kirkir: Soft sore.
Khupti: Gonorrhoea. Any urethral or vaginal discharge.

Shelo: Lump. Hernia.
**Bawasir*: Haemorrhoids (swelling and bleeding).
Hedit insufurma: Varicose veins (tubes joined together).
**Ruheh ahmer*: Phlebitis (red wind).

Dula: Any superficial local inflammation which has not ulcerated.
Gosato: Abscess (eaten up).
Bararìso: Cellulitis (swelling made).
Bog: Septic wound.

Umbar: Ringworm.
Dabdul: Herpes.
Udò: Rash. Applied to any skin condition without characteristic features.

Wallan: Mad.
Hinuseh: Jealousy (see page 214).

Uryan: Deformed child.
Farùrah: Hare-lipped.
Adin: Cripple.
Labed: Man without testicles in scrotum and eunuchoid.

AN ORIGINAL CLINICAL RECORD OF HUGHLINGS JACKSON WITH AN INTERPRETATION

WALTHER RIESE and WILLIAM GOODDY

Introductory Note

While there is no doubt that personality structure and life circumstances cannot be overlooked in any attempt to unfold the *genesis* of a great man's achievement, the work itself, which has stood the test of time, must be understood and evaluated on its own ground, i. e., the scope and precision of thought it conveys, the completeness and correctness of experience it embodies, and the new horizons it opens. The greatness of a genius is displayed by the greatness of his work, but not by the routine of his life. Here are the limits of the biographical approach in historical investigations.[1] In fact, man's greatest achievements have remained anonymous. No record tells us the history of those who invented language, discovered fire, or constructed the first wheel. We are in no need of any biographical knowledge for the *understanding* of the law of gravitation. We analyze and teach the principles of Hippocratic medicine, though the chief of the medical school of Cos is a legendary rather than a historical figure. In the light of these considerations the publication of the clinical notes taken from the records of the National Hospital, Queen Square, London,[2] does not seem to be justified. Indeed, the fact that these notes carry the name of Hughlings Jackson (and that of David Ferrier) would not have promoted our decision to publish and to interpret them. But problems of historical significance are raised in the notes. These problems are the subject of the brief chapters preceding the original text.

[1] ". . . quand un homme est grand homme, ce n'est pas quand il se couche, se lève, éternue, etc. . . . , c'est quand il écrit, quand il pense et ce n'est que par moments, comme un acteur. Or, dans ces moments, l'homme est vraiment grand et nous l'avons par ses œuvres; il vaut mieux ignorer le reste; cela n'ajoute rien à l'homme et pour ceux qui ne comprennent pas ces choses, cela ne pourrait que diminuer et tuer l'art." Claude Bernard, *Le cahier rouge*. Paris, Gallimard, 1942, p. 119. (". . . a great man is not great when he goes to bed, gets up, sneezes, etc. but only when he writes, thinks, and at times only, like an actor. In these moments, however, he is truly great, and we reach him through his work; we had better ignore the rest; it does not add anything to the man and may only diminish and destroy his creation in the eyes of those who lack understanding.")

[2] G. Holmes, The National Hospital Queens Square. London 1860-1948. Edinburgh and London. E. & S. Livingstone Ltd., 1954.

A Short History of the Term and Concept of Catalepsy

There can be little doubt that Caelius Aurelianus'[3] chapter on catalepsy stands out from all the extant ancient literature[4] for the universality of his approach and his circumspect analysis of the condition. The author first gives the *synonyms*, listing *apprehensio*, *oppressio*, *aphonia*, *catoche*, *anaudia*. Catalepsy was believed by the ancients to be a true entity. Caelius Aurelianus described the symptomatology, the premonitory signs, and the outcome as he gathered them from other sources and above all, from observations of his own. He mentioned acute fever, loss of voice, blunting of the senses, a large, strong, full, and moist pulse, and a fixed and steady gaze, as characteristic signs. The role of localities (Rome), seasons (autumn), life period (childhood), and sex (female) was stressed. These influences conveyed a Hippocratic tradition, while the relative neglect of the history and the causes (etiology) for an outline of treatment revealed the teaching of the methodists, the disease being shifted to one of their two "communities," namely the state of stricture. Finally the disease was differentiated from *lethargy*, *apoplexy*, disease of the *esophagus*, *fainting*, *worms*, and, in anticipation of modern diagnostic problems, hysterical suffocation. Also included were collapse, through hunger and starvation, and impairment or blunting of the senses through smelling coals or ointment.

Galen was probably the first to correlate catalepsy with a definite region of the brain. His reason for selecting the posterior areas of the brain is not clear; but by his regional diagnosis he anticipated the neuroanatomical conception of mental disorder, now thought so significant of the 19th and 20th centuries. The historian of neuropsychiatry notes with special interest the view of the eminent English clinician, Jackson, held eighteen centuries after Galen (and first enunciated by Charlton Bastian), that the *posterior* lobes of the brain are more important in intellectual operations than the anterior.[5] Neither Jackson nor Bastian was aware of their Roman forerunner. As in so many other fields, post-Galenic medicine made no new contribution to the subject of catalepsy. It remains

[3] Caelius Aurelianus, *On Acute Diseases and on Chronic Diseases*. Edited and translated by I. E. Drabkin. The University of Chicago Press, 1950.

[4] The meaning and the use of the diagnosis *catalepsis* in antiquity was discussed by E. D. Baumann. (Die Katalepsie der Antiken. *Janus*, 42:7-24, 1938.)

[5] John Hughlings Jackson, *Selected Writings of John Hughlings Jackson*. Edited by James Taylor, Gordon Holmes and F. M. R. Walshe. London, Hodder and Stoughton, 1931 and 1932, II, p. 142.

remarkable that Cullen,[6] whose nosological system exerted such a lasting influence, did not list catalepsy in his second class, i. e. the *neuroses*. But we find it in Sauvages' classification where it appeared as a genus of the *comata*, an order of the class *debilitates*. Sauvages defined catalepsy as follows: *status soporosus cum artuum flexitate et ad quosvis novos situs retinendos aptitudine*. This statement was clearly the first and unmistakable description of *flexibilitas cerea*, a term which was introduced by W. R. Gowers only as late as 1882 (Mettler).[7]

Of especial interest to the medical historian is the interpretation of catalepsy to be found in the famous *Encyclopédie ou Dictionnaire raisonné des sciences, des arts et des métiers* by Diderot and d'Alembert.[8] Though, as a rule, the physicians who contributed to the *Encyclopédie* were far from being representative of current conventional views of the medical faculties, the author (N) of the article " catalepsie " used the traditional and more or less phantastic design of Cartesian neurophysiology[9] to explain the sudden arrest of voluntary motion and the fixation of the posture assumed passively or actively by the patient. Due to an engorgement of the cerebral vessels, he concluded that the animal spirits cannot depart from the brain to the nerves and so produce movement. Among the causes of catalepsy the author cited extreme melancholia, sudden emotions, and deep and continuous meditation on the same subject. He recommended strong impressions of an acoustic or olfactory type as appropriate remedies, to be accompanied, if needed, by slightly painful procedures, such as scarifications, bleeding, vomiting, and so on.

The fragment of a case history, which is here reproduced, was written by Hughlings Jackson in 1881. On the European continent at this time, Charcot's teaching was gaining momentum. Was Jackson himself impressed by the eminent French clinician whose demonstrations of hysterical phenomena at the Salpêtrière aroused so much interest and attracted so many visitors? Or did he remain sceptical because of their spectacular and allegedly artificial character? Though it is true that Charcot's name recurred several times in Jackson's writings, it was never mentioned in relation to abnormal mental behaviour. The fact is the

[6] *Synopsis nosologiae methodicae*. 4th edit., Edinburgh, W. Creech, 1785.

[7] *History of Medicine*; a Correlative Text, Arranged According to Subjects. Philadelphia, Blakiston, 1947.

[8] Tome VI, p. 509, Genève, 1777.

[9] See Walther Riese and Ebbe C. Hoff, A History of the Doctrine of Cerebral Localization. Sources, Anticipations and Basic Reasoning. *J. Hist. Med. and Allied Sc.*, 1:50-71, 1950.

more surprising when we learn from an outstanding pupil of Charcot, S. Freud, that at the Salpêtrière, catalepsy was a favorite test object for Charcot's demonstrations of the effects of *suggestion*.[10]

Jackson as a Psychiatrist

In one of his least known but most remarkable papers Jackson[11] revealed his interest in psychopathology. Faithful to his principle of approaching insanities from the study of the "slightly morbid mental states," many years before Freud, he selected jokes and dreams for his analysis of mental processes. So strong, however, was his tendency to make "profitable comparisons" between insanity and physical states that he called "mental diplopia" the state we experience when hearing the answer to a riddle which depends on a pun. Here, he believed, was a caricature of the normal process of all mentation, the latter always being "stereoscopic" or "diplopic," that is the tracing of relations of resemblance and difference. Thus, unlike the psychoanalyst, he stayed within the limits of formal thought processes. It was the *logical* rather than the *instinctive* aspect of the problem which attracted him. In brief, the "factors" of jokes and dreams and not their emotional dynamics were his theme.

Jackson did not pretend to be a *psychiatrist*.[12] Even his lasting and uncontested title as one of the greatest neurologists of the past needs further qualification. He did not resemble the "specialist" of our time, anxious to acquire the attributes of a perfect craftsman in rapid diagnosis and no less rapid therapy. The reader who hopes to find in the writings of the founder of modern neurology the complete picture of diseases of the nervous system, their courses, symptomatologies and lesions, will be disappointed. Jackson did not construct a body of knowledge out of the elements which his faithful and repeated observations taught him. Instead of knitting them together piece by piece, ultimately to become a robot of experiential material, he used these elements for illustrating the validity of a general principle which he took not from medicine but from the

[10] S. Freud, Hypnotism and Suggestion (1888). *Cellected Papers*, V, pp. 11-24, London, The Hogarth Press, 1950.

[11] An Address on the Psychology of Joking. *Selected Writings of John Hughlings Jackson*, II, pp. 359-364.

[12] For further details see W. Riese: Principles of Neurology in the Light of History and Their Present Use. *Nervous and Mental Disease Monographs*, New York, 1950. Hughlings Jackson's Doctrine of Consciousness. (Sources, Versions and Elaborations). *J. Nerv. and Ment. Dis. 120*: 330-337, 1954.

philosophy of organized nature. This principle was that of evolution, as enunciated by Herbert Spencer. In Jackson's own method is embodied the essence of this principle, which is the idea of the passage from the general to the special. Jackson displayed the same indifference with regard to diagnosis and classification of mental disorders, urging that for clinical purposes the necessity of arrangements "by type" of cases of insanity should be continued; but at the same time urging their study "as they exemplify dissolution of the highest cerebral centres." [18] Again, the reader will find no masterpiece of clinical psychiatry in the few pages which Jackson devoted to insanity. In his major article on the subject, "The Factors of Insanities," he described depths of dissolution of the highest cerebral centers with their corresponding degrees of insanity. Focussing his attention on the *substratum* of mind rather than its manifestations in its proper terms, he remained faithful to the doctrine of concomitance. Just as in his doctrine of evolution of movements, he distinguished the activities of the spared layers as the positive symptoms of insanity, from the negative ones, resulting from dissolution. The negative symptoms were described in a very cursory manner, as greater or lesser defects of consciousness. Jackson was far more specific in the enumeration of the positive symptoms of insanity, such as illusions, delusions, extravagant conduct, and abnormal emotional states, but even these were mentioned rather than described or analyzed in their own (i. e. psychical) setting.

This state of things is reflected in the clinical record here reproduced. Though these pages do not reveal the genius of Hughlings Jackson, we consider them a most valuable contribution towards an attempt to give detail to the outline of the intellectual figure of their author, precisely because they display the self-set limits of Jackson's method and intentions. His achievements stand out even better on the background of those more conventionally treated manifestations of hysteria which he was bound to neglect somewhat; for perfection is neither an endless nor a boundless state.

Comment on Jackson's Notes

The following case was observed by both Ferrier and Jackson. The reader will be impressed by Jackson's careful observations and the precision with which they were recorded. There is also a strong experimental element in Jackson's description of the patient's behavior. The

[18] *Op. cit.*, II, p. 411.

notes leave no doubt as to the psychogenesis of the condition and its protean symptomatology. Since the days of Jackson and especially since the first post-war period in the twentieth century, this dramatic type of hysteria (Charcot's "grande hystérie") has become increasingly rare, at least on the European continent. There are several reasons for the shift of symptomatology towards the less spectacular "neurosis," some of these reasons being the heavy social demands made on the average citizen and the inexorably realistic attitude forced upon him at a time of repeated crises. We have witnessed a change in symptomatology in one generation, and must note, in passing, how patients are still highly suggestible to the new disease concepts that the physician creates and substitutes for the old.

The diagnosis of "Catalepsy" in the present case is borne out by the sudden rigidity as well as the patient's tendency to maintain positions imposed upon her. In this respect the diagnosis of catalepsy stands today as it stood in Jackson's time. What modern psychiatry has to offer as a new information is another source from which catalepsy springs, namely schizophrenia, a disease as yet unknown to Jackson. This is the main reason why catalepsy has been completely abandoned as a disease entity and, subsequently, as a diagnosis. It is only retained as a symptom.

Case History

The heading of the first page of the case history (which occurs on pp. 85, 87, 89, 91, and 95 of the case book) carries the name of Dr. Ferrier. The patient is designated as female, age 11, ill since March '81, and admitted on April 1, '81. The entries under "Disease" and "Result" read "Catelepsy" and "Improved" respectively. The name of Dr. Jackson is given on top of p. 89, and that of Dr. Ferrier on top of p. 95.

[p. 85]

Been to school until last 12 months. Has lived in York before the last 13 months. Father a traveller.

Hereditary no paralysis, no fits, no insanity, mother's brother died of phthisis. mother had 10 children, 23 miscarriages.

Previous Illness no scarlet fever, no rheumatic fever, always very healthy.

Present Illness, Cause was shut up in a coal-cellar all one morning and was much frightened and in about 6 weeks time on March 1st/81 had the first attack. The day before was quite well except for a tooth-ache: She did a quantity of work in the morning, and she was washing up the dinner things at the time, and suddenly fell down then got up, asked her sister to wash up, then suddenly became rigid

with the eyes fixed & staring and with a knife and fork in her hands, was put down in a bed, and soon began to kick and scream and cry out about her head and raving for 5 nights and days; was given some medicine, got quiet and went to sleep; while she was in this state, she seemed to recognize her friends but knew nothing about it afterwards; and seemed to take very deep breaths, the body being blown up. Eat well all through.

Characters of other attacks: Sometimes dances round the room singing and at others she comes suddenly stiff while standing and remains so few minutes to ½ hour; sometimes very violent slapping her mother's face & pulling her hair.

Always by day never by night; sometimes falls down flat but has never missed herself. Never had convulsions.

If not stiff limbs can always be placed in different positions.

[p. 87]

Frequency 50 to 60 a day.

Duration from a few minutes to an hour & ½.

No cause known to bring them on now.

Talks very childish; more heavy and stupid, used to be very sharp; is more emotional and laughs at nothing.

Not menstruated yet.

Never has any ***warning***.

Always hungry.

Present State

Patient is well-made child, talks rather childishly and when told to look at an object, before one can count 4, she falls backwards eyes closed, and becomes quite rigid and cataleptic, the limbs remaining wherever they are put and in any position: no change of colour in face, conjunctiva reacts reflexly. Pupils react to light. Patellar tendon reflex present also plantar reflex; when tickled in the axillae she gives a grunt and evidently objects to it, trying to get away from it.

While in the attack ankle clonus obtained slightly in both feet while joints rigid, and when she recovers ankle clonus is marked in both feet.

When she is made to look at an object to her extreme left, the eyes do not remain fixed in the attack, but turn to the front position as she goes off.

Can be made to stand on one leg, with a little holding, in the attack.

Some internal strabisms.

[p. 89]

When she is sent off in the fits by a watch put to her ear she keeps the eyes open. when a tuning fork put on her teeth she laughs and looks pleased, and when a watch put to her ear, she instantly changes and looks dreadfully terrified.

April 9th

When the rt. side of the temporal region is stroked it has no effect when her eyes opened, & unless she is told to count the number of times she is stroked, she goes off as usual, but no unilateral effect produced.

Eau de Cologne, she likes, and when made to smell it with the R. nostril only, she goes off in the usual way, but when the same bottle is applied to her nose, while in the attack, she makes a face expressive of disgust, but when asafotida is applied, the face is one of intensive disgust and she shrinks from it.

A watch applied to eye and told to count it, she went off suddenly got up and walked about the ward by herself and a watch then applied to her ear made her open her eyes and throw her head back and look like a demented frantic person; salt put into her mouth brought her round.

April 13th

After she is hypnotized, a watch applied to her ear makes her open her eyes with internal strabisms and pupils then much contracted;

while hypnotized rubbing the left side of head produces no change Pressing facial nerves or ulnar has no effect in producing contracture.

When hypnotized and when the eyes are parallel, the pupils are equal and 3mm in diameter, and react to light, but when the eyes are converged with internal strabisms which is usually present the pupils contract to 2 or 2⅓ mm, or even smaller and then do not react to light.

When the eyes are opened patient is cataleptic and remains so when the eyes are closed.

May 11th

Today when hypnotized she had hiccough, when finger approached to her eyes she closes them without being touched.

When inside of nose tickled, she tries to thrust away the pen used.

May 12th

This morning after being hypnotized twice, was writing her name and suddenly went off into another attack, and while in it was very lively and while standing up she caught sight of a flower in the nurse's dress and put her nose to it and

[p. 91]

sniffed at it, it was then taken out and put in Dr. Juke's button-hole and she immediately looked distressed, took the flower away from him put it in the nurse's button-hole and then expressed pleasure.

Was then given the medicine boards of different patients, she looked at the names, and once she named the case correctly, and directly moved off and hung them up over the right bed, given her own she pointed to herself and said "that's me" and hung it in an adjoining room (she has done this before while in normal state).

She was shown a penny said it was a farthing, afterwards said a penny, showed a French penny and said "French" to it, given a florin with the pennies, she instantly pocketed it, said it was a two shilling piece, made off with it, restored the pennies, but said she meant to keep the florin (on waking up and finding the florin in her pocket she was very much concerned & cried and said it was not hers and she did not put it there).

While hypnotized, when told to, she wrote her name and that of the Nurse, and Miss Jone's and the name of the hospital, simply told to write the names of the above who were standing round her, but not told their names. She wrote some of them with the hand placed before her eyes so that she could not see.

A penny thrown on the floor and told to find it and keep it, she looked about saw it and pointed her finger at it and made off for it, when she got near it, felt on the ground with her hands and seemed pleased when she had found it, returned it to Rms. when told to, asked what she would do with the penny, said "she would buy some wools for a mat" which she is making. Asked by the nurse for some of the pennies she gave her an empty reel and laughed much at the deception.

Feels the pricking of a pin. When she came round did not know anything about the writing, the character and spelling of which she laughed at, but recognized directly what she had written before being hypnotized. Knows nothing of what has gone on afterwards; all the above goes on with the eyes open as a rule.

[p. 95] June 8th

This afternoon at Dr. Ferrier's visit the patient was hypnotized and looking steadily into Dr. Ferrier's eyes for 3 or 4 secs. She fell backwards becoming perfectly rigid, eyes semi-closed. She was then sat in a chair (rigidity passing off enough to allow of this) on her limbs being placed in any position however then remained fixed in that posture until returned to that of natural ease (by Dr. F.). Showed signs of disgust by shaking the head violently, however (1) her face was blown up or (2) when a watch was held close to her ear. Exhibited signs of disaprobation on being stimulated to degree of pain. There was strong internal strabism more especially affecting right eye and most marked when head was shaken as above mentioned.

AGE-SPECIFIC MORTALITY IN SELECTED WESTERN EUROPEAN COUNTRIES WITH PARTICULAR EMPHASIS ON THE NINETEENTH CENTURY

Observations and Implications

ODIN W. ANDERSON *

I. Statement of the Problem

The morality rates for the general population and the ages at which people die are regarded as useful although rough measures of the health levels of given population groups. For example, today in areas like Western Europe and North America a crude mortality rate of 15 or less is considered to be "normal" in terms of attainable standards of living, given general application of known technical knowledge.

As stated in one article, "The distribution of the world's crude death rates is essentially a distribution of the world's poverty, malnutrition, and starvation." [1] When one learns that only 20 percent of the world's population enjoys a "normal" crude mortality rate of 15 and less, and around 43 percent of the world's population suffers a mortality rate of 30 and over, the effects of general social and environmental conditions on health require no elaborate documentation.[2]

Almost all western European countries and the Province of Quebec have recorded annual mortality rates as far back as 1875 and three of them prior to 1800. It is thus possible to obtain a rough idea of improved social and environmental conditions by noting the declines in the mortality rates. However, this method obscures what was happening to age-groups during the Nineteenth and Twentieth Centuries, and findings in age-specific mortality for the last 150 years will form the bulk of this article.

In any case, mortality rates began to fall in Western Europe during the latter half of the Nineteenth Century, actually clustering in the twenty-

* Research and first draft were completed while the author was Associate Professor in Charge of the Social Aspects of Medicine, Faculty of Medicine, University of Western Ontario, London, Ontario, Canada, 1949 to 1952.

[1] "Food, income and mortality." *Population Index* 13: 96-103, April, 1947.

[2] Percentages calculated from estimates in: United Nations. *Demographic Yearbook, 1949-1950*, N. Y., United Nations, 1950, p. 14.

TABLE 1

ONSET OF FALL IN CRUDE MORTALITY RATES BY AREAS AND DECADES[a]

Area	Decade
Sweden	1800–1810
Norway	1860–1870
New Zealand	1870–1880
England and Wales	1870–1880
Scotland	1870–1880
Luxembourg	1870–1880
France	1870–1880
Germany	1870–1880
Denmark	1880–1890
Finland	1880–1890
Quebec	1880–1890
Iceland	1890–1900

[a] Sources of basic data: Sverige: Statistiska Centralbyrån, *Statistisk Årsbok för Sverige, Trettiosjunde Argangen, 1950*. Stockholm, Norstedt, 1950, p. 52. Norge: Statistisk Sentralbyra, *Statistiske Oversikter, 1948*, Oslo, Aschehough, 1949, p. 40. New Zealand: Census and Statistics Department, *New Zealand Official Year-Book, 1947-49, Fifty-Fifth Issue*, Wellington, N. Z., Government Printer, 1950, p. 69. Great Britain: General Register Office, *Statistical Review of England and Wales for the Year 1945* (New Annual Series, No. 25), Tables, Part I, Medical, London, H. M. Stationery Office, 1947, p. 2. Scotland: General Register Office, *Ninety-Third Annual Report, 1947*, Edinburgh, H. M. Stationery Office, 1950, p. 77-78. Luxembourg: Ministère des Affaires Économiques, *Statistiques Économiques Luxembourgeoises*, Août, 1949, Luxembourg, Bourg-Bourger, 1949, p. 7. Joseph J. Spengler: *France Faces Depopulation*, Durham N. C., Duke University Press, 1938, p. 53. Danmark: Statistiske Department, *Statistisk Arbog, 1950*, Köbenhavn, Bianco Lugo, 1950, p. 33. Finland: Statistiska Centralbyrån, *Statistisk Årsbok för Finland, Ny Serie—XLV—År 1949*, Helsingfors, Statsradets Tryckeri, 1950, p. 39. Quebec: Bureau of Statistics, *Statistical Yearbook, 1921*, Quebec City, Kings Printer, 1922, p. 57. Italia: Istituto Centrale di Statistica, *Annuario Statistico Italiano, 1944-48*, Serie V—vol. 1, Roma, Istituto Poligrafico dello Stato, 1949, p. 39. Vilmundur Jonsson: *Skipun Heilbringdismálá á Islandi*, Reykjavik, Gutenberg, 1942, p. 150, approximated from a graph on opposite page. Jamaica: Registrar-General's Department, *Annual Report for the Year Ended 31st. December, 1949*, Kingston, Government Printers, 1950, p. 38. Cyprus: Colonial Administrative Service, *Census of Population and Agriculture, 1946, Report*, London, Crown Agents for Colonies, 1949, p. 17. Costa Rica: Ministerio de Economia y Hacienda, *Anuario de la Direccion General de Estadistica, Año, 1948*, San José, Imprenta Nacional, 1949, p. 55. Portugal: Instituto Nacional de Estatistica, *Anuario Demografico, 1949*, Lisboa, Tipografia Portuguesa, 1950, p. 41. Kingsley Davis: *The Population of India and Pakistan*, Princeton, N. J., Princeton University Press, 1951, p. 33.

year period from 1870 to 1890. Sweden's decline started relatively early, the first decade of the Nineteenth Century.

On the other hand, a comparison by area of the decades when the crude mortality rates and the infant mortality rates began to fall reveals that in Western Europe and in the Province of Quebec the onset of decline in the crude mortality rate usually preceded that of the infant mortality rate as brought out in Tables 1 and 2.

TABLE 2

ONSET OF FALL IN CRUDE MORTALITY AND INFANT RATES BY AREAS AND DECADES [4]

Area	Crude Mortality	Infant Mortality
Sweden	1800–1810	1890–1900
Norway	1860–1870	1890–1900
New Zealand	1870–1880	1890–1900
England and Wales	1870–1880	1890–1900
Scotland	1870–1880	1890–1900
France	1870–1880	1890–1900
Denmark	1880–1890	1890–1900
Luxembourg	1870–1880	1900–1910
Quebec	1880–1890	1910–1920

[4] Sources of basic data: For Crude Mortality the same reference as in previous table. For infant mortality as follows: Danmark: Statistiske Department, *Statistisk Årbog, 1950*, Köbenhavn, Bianco Lugo, 1950, p. 33. Great Britain: General Register Office, *Statistical Review of England and Wales for the Year 1945* (New Annual Series No. 25), Tables, Part I, Medical, London, H. M. Stationery Office, 1947, p. 2. Vilmundur Jonsson: *Skipun Heilbringdismálá á Islandi*, Reykjavik, Gutenberg, 1942, p. 150, approximated from a graph on opposite page. Scotland: General Register Office, *Ninety-Third Annual Report, 1947*, Edinburgh, H. M. Stationery Office, 1950, p. 68. New Zealand: Census and Statistics Department, *New Zealand Official Year-Book, 1947-1949, Fifty-Fifth Issue*, Wellington, N. Z., Government Printer, 1950, p. 72. Sverige: Statistika Centralbyrån, *Statistisk Årsbok för Sverige, Trettiosjunde Årgången, 1950*, Stockholm, Statistika Centralbyrån, 1950, pp. 63-67. Schweiz: Eidgenössisches Statistisches Amt, *Statistisches Jahrbuch der Schweiz, 1949*, Basel, Birkhäuser, 1950, p. 79. Norge: Statistisk Sentralbyrå, *Statistiske Oversikter*, Oslo, Aschehoug, 1949, p. 40. Luxembourg: Ministère des Affaires Économiques, *Statistiques Économiques Luxembourgeoises*, Août, 1949, Luxembourg, Bourg-Bourger, 1949, p. 7. Jean Bourgeois-Pichat: "Évolution générale de la population française depuis le XVIII[e] siècle," *Population*, October-December, 1951, 6, pp. 635-672. Quebec: Bureau of Statistics, *Statistical Yearbook, 1921*, Quebec City, Proulx, 1922, p. 2; and Canada, Dominion Bureau of Statistics, *Vital Statistics, 1946, 26th. Annual Report*, Ottawa, The Bureau, 1948, p, 24. Kingsley Davis: *The Population of India and Pakistan*, Princeton, University Pres, 1951, p. 34. Jamaica: Registrar-General's Department, *Annual Report for the Year Ended 31st. December, 1949*, Kingston, Government Printers, 1950, p. 38. España: Instituto Nacional de Estadistica, *Anuario Estadistico de España, 1950*, Madrid, Instituto Nacional de Estadistica, 1950, p. 108. Cyprus: Colonial Administrative Service, *Census of Population and Agriculture, 1946, Report*, London, Crown Agents for Colonies, 1949, p. 18.

This table indicates that improvements in the age-groups above one preceded those under one, which fact was discovered when the writer happened to plot the crude mortality and infant mortality rates for each country on the same semi-logarithmic graph paper in order to save paper. The writer was thus prompted to pursue the analysis of the available age-specific mortality rates during the Nineteenth Century. It was apparent that the age-specific improvements in mortality rates during the Nineteenth Century were quite different from those of the Twentieth, and an analysis of the age-specific mortality rates would reveal the differences.

It appears that no detailed attention has been paid to age-specific mortality differentials during the Nineteenth Century, except to the extent such attention has been implicit in studies by Dublin, Taylor, Logan, Bourgeois-Pichat and Hart.[5] Detailed analysis of available long-term age-specific mortality follows in the next section.

II. Age-Specific Improvements in Mortality—Nineteenth and Twentieth Centuries

The following set of graphs reveals the percentage age-specific improvements during the Nineteenth and Twentieth Centuries from selected countries and areas and from one selected period to another. The countries and areas were chosen solely on the basis of the availability of published age-specific mortality rates. The use of base periods and the improvements or worsening after a period of time in terms of a base period appear to be a more effective method of graphic presentation than semi-logarithmic graphs since differences both between age-groups and time-periods are more readily visible.

Figures 1 and 2 reveal the percentage changes in age-specific mortality for Sweden between selected periods. During the latter half of the Nineteenth Century (Figure 1) the age-groups from 15 to 25 showed no improvements, and the chief improvements took place in the age-groups 0-5 and 30-80.

[5] Louis I. Dublin, Alfred Lotka, and Mortimer Spiegelman: *Length of Life; A Study of the Life Table*, Rev. ed. N. Y., Ronald Press, 1949. Wallis Taylor: "Changing mortality from 1841 to 1947 measured by the life table," *British Journal of Social Medicine*, 5: 162-176, July 1951. W. P. D. Logan: "Mortality in England and Wales from 1848 to 1947," *Population Studies*, 4: 132-178, September 1950. Jean Bourgeois-Pichat: "Evolution générale de la population française depuis le XVIII[e] siècle," *Population*, 6: 635-672, October-December, 1951. Hornell Hart and Hilda Hertz: "Expectation of life an index of social progress," *American Sociological Review*, 9: 609-621, December 1944.

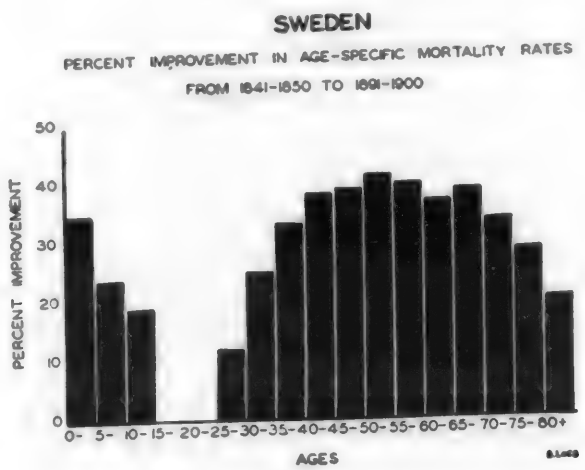
SWEDEN
PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES
FROM 1841-1850 TO 1891-1900
PERCENT IMPROVEMENT
0
10
20
30
40
50
0- 5- 10- 15- 20- 25- 30- 35- 40- 45- 50- 55- 60- 65- 70- 75- 80+
AGES

FIG. 1.

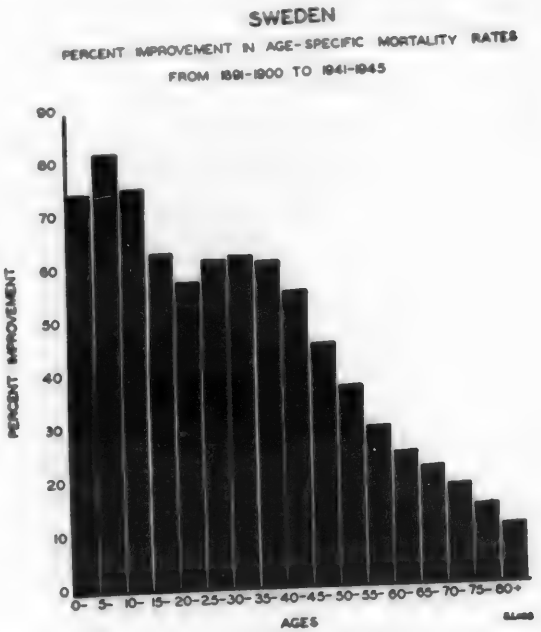
SWEDEN
PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES
FROM 1891-1900 TO 1941-1945
PERCENT IMPROVEMENT
0
10
20
30
40
50
60
70
80
90
0- 5- 10- 15- 20- 25- 30- 35- 40- 45- 50- 55- 60- 65- 70- 75- 80+
AGES

FIG. 2.

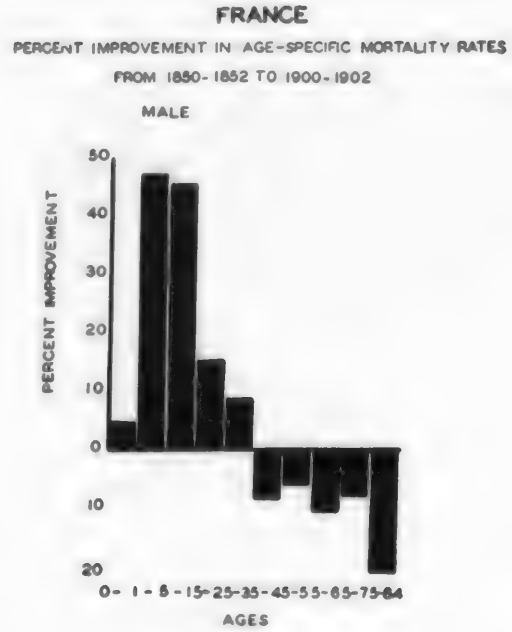
FRANCE
PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES
FROM 1850-1852 TO 1900-1902
MALE
PERCENT IMPROVEMENT
50
40
30
20
10
0
10
20
0- 1- 5- 15- 25- 35- 45- 55- 65- 75- 84
AGES

FIG. 3.

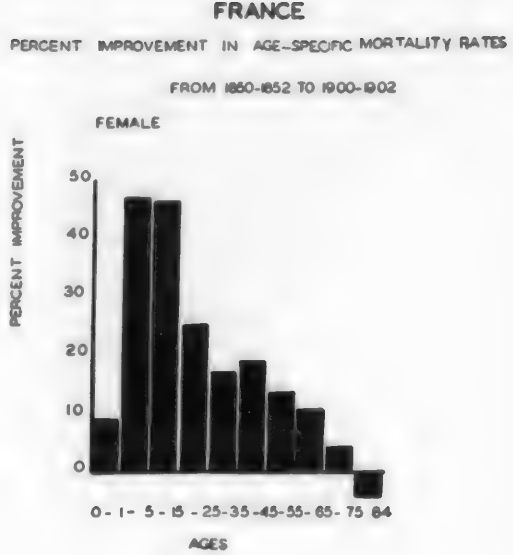
FRANCE
PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES
FROM 1850-1852 TO 1900-1902
FEMALE
PERCENT IMPROVEMENT
50
40
30
20
10
0
0- 1- 5- 15- 25- 35- 45- 55- 65- 75- 84
AGES

FIG. 4.

Figure 2 reveals a startling difference between the age-specific mortality improvements for Sweden during the latter half of the Nineteenth Century and the first half of the Twentieth. This figure illustrates the usual pattern of improvements during the past 50 years in Western Europe, The United States, and Canada, i. e., the lower the age the greater have been the mortality improvements. On the other hand, as stated previously, the tremendous improvements taking place in the upper age-groups during the Nineteenth Century have been overlooked, and the improvements during the Twentieth Century have occurred on the base established during the Nineteenth Century, which period was anything but static as far as mortality rates were concerned.

The changes in the age and sex-specific mortality rates that took place in the French population during the last 100 years are revealed in Figures 3-6. During the latter half of the Nineteenth Century, the chief beneficiaries were the age-groups from 1-25 among both sexes. The male age-group 35-84 experienced an appreciable net loss, whereas the females in the same age-group (except 75-84) experienced a gain. The age-group under 1 showed only a small improvement. Figures 5 and 6 reveal in general the same patterns of improvement during the first half of the Twentieth Century as experienced in other areas of the Western World.

The mortality experience of England and Wales (Figure 7) is almost exactly opposite to the Swedish experience for the same period. From 1891-1900 to 1941-1945 (Figure 8), a rough approximation of the same pattern seen in other areas during the same period is apparent. The relatively small improvement in the virile age-group 20-25 should be noted.

Age-specific mortality data available in published form from a city, Baltimore, are shown in Figure 9. During the 70-year period from 1830 to 1900 an American city shows great age-specific mortality changes as do the countries during the Nineteenth Century. The age-group from 0-5 suffered a slight net loss and the virile age-group from 10-30 showed less improvement than age-groups 30-50.

III. Observations and Implications

The age-specific improvements in mortality presented in the foregoing section posed more questions than they answered, but they served as objective indicators of social changes during the Nineteenth and Twentieth Centuries which had a profound influence on a biological phenomenon—human mortality. It is common knowledge, needing no extensive documentation, that the Nineteenth Century economically and demographically

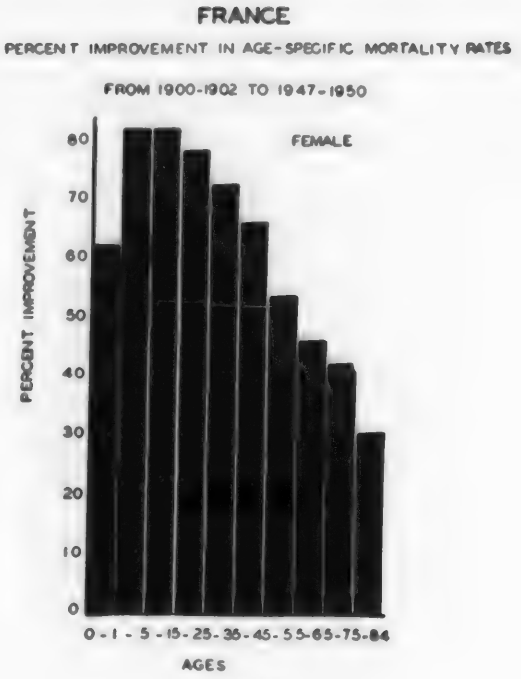
FRANCE
PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES
FROM 1900-1902 TO 1947-1950
FEMALE
PERCENT IMPROVEMENT
80
70
60
50
40
30
20
10
0
0-1-5-15-25-35-45-55-65-75-84
AGES

FIG. 5.

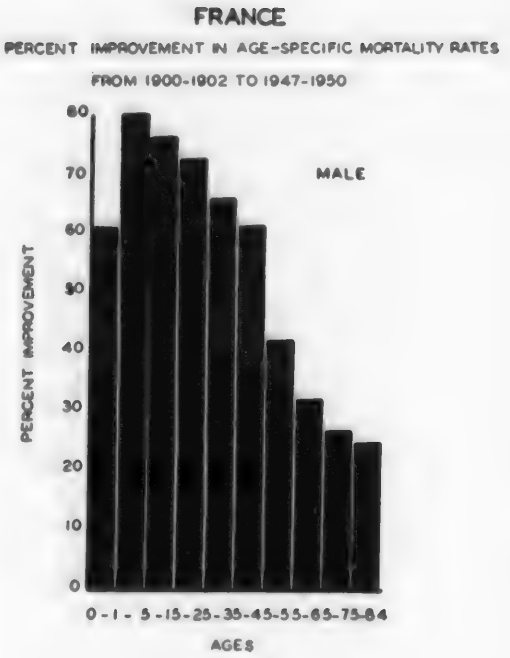
FRANCE
PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES
FROM 1900-1902 TO 1947-1950
MALE
PERCENT IMPROVEMENT
80
70
60
50
40
30
20
10
0
0-1-5-15-25-35-45-55-65-75-84
AGES

FIG. 6.

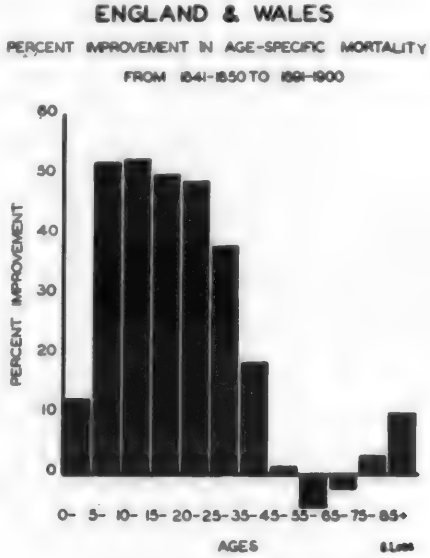

FIG. 7.

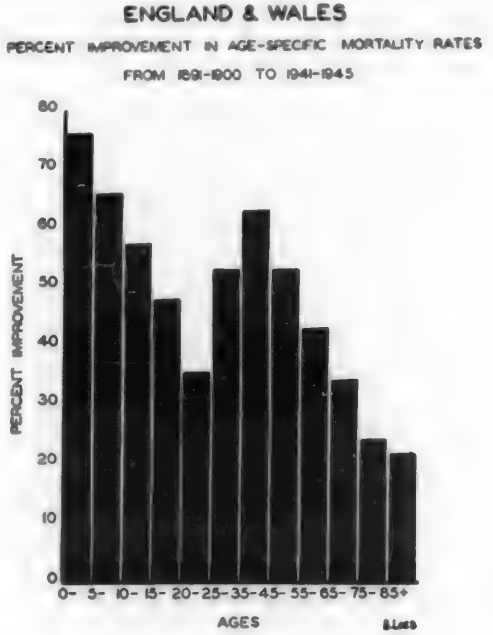

FIG. 8.

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was an explosive century. Increased productivity and improved transportation enabled the fruits of production to be distributed more widely. In Western Europe famine was abolished (except in a particular instance like the potato-famine in Ireland), and the food supply was stabilized. Communicable diseases, except smallpox, were not generally controlled until the early Twentieth Century, but it is apparent that age-groups above 10 experienced great declines in mortality which were not due to any specific medical influences, but probably had their genesis in improved nutrition.

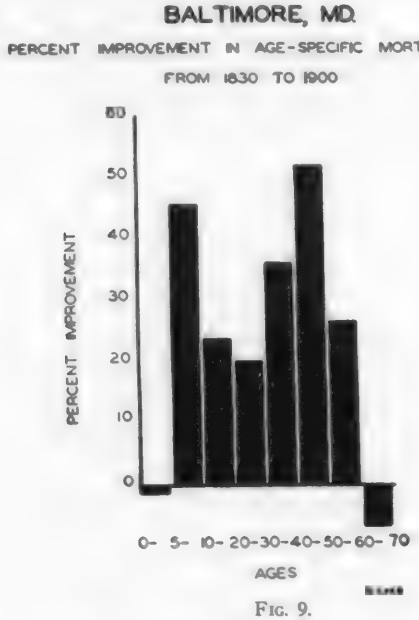

FIG. 9.

To establish more or less direct cause and effect relationships between improved age-specific mortality and improved nutrition, housing, medical care, and sanitation during the Nineteenth Century would require diligent research by social and medical historians in order to unravel all the factors. The material on social and medical data is quite profuse, but, of course, extremely unorganized for the present purpose, and a systematic fusion of social and medical history would be required.

The above data show quite conclusively that an intensive social-medical-historical investigation would be justified. For example, Hart and Hertz

show the graphic relationships between real wages, major inventions, and the average expectation of life in Great Britain and the United States.[6] All trend lines accelerate upward during the latter half of the Nineteenth Century and then begin to taper off during the Twentieth. These are examples of gross relationships between mortality and social and economic conditions which have been and can be established with further research.

More specifically, however, it would seem that the following observations and their implications flowing from the age-specific mortality data during the Nineteenth Century can be set forth:

A. Since 1900 age-specific improvements in mortality have been generally characterized by decreasing improvement with increasing age. There is little knowledge or recognition of the fact that there were tremendous improvements in mortality in the adult and middle age-groups and relatively little improvements in the very young groups before 1900. It is this kind of differential improvement which formed the base for improvements during the Twentieth Century.

B. That the crude mortality rates were falling during the Nineteenth Century is common knowledge, but an age-specific analysis of mortality improvements has not been attempted. The findings in this study suggest that medicine as such had little or nothing to do with mortality improvements during the Nineteenth Century, because the upper age-groups which showed marked improvements benefit relatively little from medical developments even now. A possible exception is the control of smallpox. Other measures like environmental control of sanitation were not generally applied until late in the Nineteenth Century, if then. Near-universal sanitary control is largely a Twentieth Century development. It is suggested that the chief reasons for mortality improvement during the Nineteenth Century were nutritional, but intensive research is indicated.

C. The fact that infant mortality in Western Europe and in many American cities did not begin to decline until the decade 1890 to 1900 would indicate that specific application of knowledge of hygiene flowing from the burgeoning science of bacteriology was

[6] Hart, *op. cit.*, p. 619. This is attempted for the pre-Industrial Revolution period by E. F. Heckscher: "Swedish population trends before the Industrial Revolution," *Economic History Review*, 2d. Series, 2: 266-277, 1950. He cites the connection between food supply and the mortality rate before the specific effectiveness of medicine in controlling communicable diseases.

showing marked effects. This is the result of specific medical developments. Likewise, during the Twentieth Century the young age-groups have benefited more in decline in mortality than upper age-groups, which again indicates the cumulative effects of specific medical developments on the lower end of the life-span. Such medical developments, as is common knowledge, have had relatively little influence on age-groups above 40. It would seem that in Western Europe and North America, despite pockets of poverty and malnutrition, a combination of medical developments and nutrition and general environmental improvements is having a rapidly diminishing effect on reductions in the mortality rates under 40 because the remaining improvement-potential is so small. The unknown area of improvement is in the upper age-groups and improvements there will not take place until our knowledge of the physiological processes of aging are better known than they now are.

D. In the data presented above there are indications that at any given time the age-groups from 20-30 or so are closer to the attainable improvement-potential than other age-groups. A reasonable assumption for such a fact would be that this is the most virile age-group which, having survived the harrowing death-traps of the young age-group is now at its peak before entering the years of physiological degeneration.

APPENDIX

Tables 3-9

The data on which Figures 1-9 are based are in tabular form in Tables 3-6 with indication of sources.

For the readers' information Tables 7-9 are also included to reveal patterns in other countries during the Nineteenth Century. They are not presented graphically because it would add to the length and complexity of the article unduly.

TABLE 3

SWEDEN

PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES BETWEEN SELECTED PERIODS[7]

Age	Percent Improvement	
	1841–50 to 1891–1900	1891–1900 to 1941–45
0–4	35.0	74.8
5–9	23.8	82.3
10–14	18.1	75.6
15–19	0.0	63.2
20–24	0.0	57.8
25–29	11.9	61.8
30–34	25.2	62.4
35–39	32.9	61.3
40–44	37.8	55.6
45–49	38.8	45.5
50–54	41.1	37.4
55–59	39.8	29.8
60–64	36.8	24.9
65–69	38.5	21.9
70–74	33.3	18.4
75–79	28.4	14.5
80–	20.0	10.7

TABLE 4

FRANCE

PERCENT IMPROVEMENT IN SEX AND AGE-SPECIFIC MORTALITY RATES BETWEEN SELECTED PERIODS[8]

Age	Percent Improvement			
	1850–52 to 1900–02		1900–02 to 1947–50	
	M	F	M	F
0–1	4.8	9.0	61.0	62.9
1–4	47.1	46.7	80.1	82.7
5–14	45.4	46.1	76.3	82.9
15–24	15.4	20.5	72.7	79.0
25–34	8.9	17.0	65.9	73.1
35–44	–8.4	18.9	61.2	66.7
45–54	–6.0	13.6	42.0	54.3
55–64	–10.5	10.6	32.0	46.8
65–74	–7.7	4.4	26.8	42.6
75–84	–21.7	4.1	24.7	31.0

[7] Source of basic data: Sverige: Statistiska Centralbyrån, *op. cit.*, p. 71.
[8] Jean Bourgeois-Pichat, *op. cit.*, pp. 635-672.

TABLE 5

ENGLAND AND WALES

PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES BETWEEN SELECTED PERIODS [9]

Age	Percent Improvement	
	1841–50 to 1891–1900	1841–50 to 1941–45
0–4	12.6	78.8
5–9	52.0	83.4
10–14	52.6	79.6
15–19	50.1	73.8
20–24	50.0	67.1
25–34	37.9	70.5
35–44	18.6	69.4
45–54	1.2	52.9
55–64	–5.4	39.5
65–74	–2.2	32.4
75–84	3.0	26.1
85–	10.0	29.2

TABLE 6

BALTIMORE, MD.

PERCENT IMPROVEMENT IN AGE-SPECIFIC MORTALITY RATES FROM 1830 TO 1900 [10]

Age	Percent Improvement
0–4	–.1
5–9	45.7
10–19	23.4
20–29	20.4
30–39	36.6
40–49	51.9
50–59	26.4
60–69	–5.4

[9] Source of basic data: Great Britain: General Register Office, *op. cit.*, p. 5.

[10] Source of basic data: William T. Howard: *Public Health Administration and the Natural History of Disease in Baltimore, Maryland,* 1797-1920, Washington, D. C., Carnegie Institution of Washington, 1924, p. 517.

TABLE 7

ITALY

PERCENT IMPROVEMENT IN SEX AND AGE-SPECIFIC MORTALITY RATES FROM GENERATION BORN IN 1880 TO GENERATION BORN IN 1900[11]

Age	Percent Improvement	
	Male	Female
0–4	26.8	26.4
5–9	48.4	45.0
10–14	35.0	31.9
15–19	15.6	23.7
20–24	16.9	26.0
25–29	24.6	31.9

TABLE 8

GERMANY

PERCENT IMPROVEMENT IN SEX AND AGE-SPECIFIC MORTALITY RATES FROM GENERATION BORN IN 1880 TO GENERATION BORN IN 1900[12]

Age	Percent Improvement	
	Male	Female
0–4	22.0	14.9
5–9	50.7	50.6
10–14	33.3	38.2
15–19	21.4	39.7
20–24	20.7	29.7
25–29	26.4	32.0
30–34	33.3	39.2

[11] Source of basic data: France: Statistique Générale de la France. Études Démographiques No. 2. *Évolution de la Mortalité en Europe depuis l'Origine des Statistiques de l'État Civil*, Paris, Imprimerie Nationale, 1941.

[12] *Ibid.*

TABLE 9

THE NETHERLANDS

PERCENT IMPROVEMENT IN SEX AND AGE-SPECIFIC MORTALITY RATES FROM GENERATION BORN IN 1840 TO GENERATION BORN IN 1880[18]

Age	Percent Improvement	
	Male	Female
0–4	0.7	17.3
5–9	35.8	41.6
10–14	50.9	41.0
15–19	34.8	38.8
20–24	25.7	40.7
25–29	50.5	44.6
30–34	70.0	49.5
35-39	71.8	49.6
40–44	61.8	48.3
45–49	43.4	45.1
50–54	29.6	34.1

[18] *Ibid.*

SHAKESPEARE AND SLEEP *

SIMON B. CHANDLER

A critical reading of all of Shakespeare's works reveals many references to sleep in its various forms. This study omits all passages containing the single word "sleep" because no special significance can be assigned to them. In more than 60 instances, however, Shakespeare used a few or as many as twenty-five or more lines to denote the nature and quality of sleep.

The lines dealing with sleep occur throughout the plays. They are present in comedies, tragedies, histories, as well as in sonnets and other poems. Likewise, they are present in early plays and late ones. No one theme is characteristic of all. Comic or serious references may occur in any type of play. However, the subject matter relating to sleep in any of its various aspects is consistent with the theme of the play or of the scene in which the lines occur. The passages concerning disturbed sleep are more frequent and as a rule contain more lines than other types. About one hundred years ago Bucknill (1) suggested that Shakespeare suffered from insomnia. A similar view has been expressed by Watson (4), and Pomeranz (3). All Shakespearian quotations are from the Kittredge (2) edition.

Although Shakespeare considered sleep in its various forms and due to many causes, all passages can be classified under four groups.

1. Normal Sleep.

Troilus.

To bed, to bed! Sleep kill those pretty eyes.
And give as soft attachment to thy senses
As infants empty of all thought.

Troilus and Cressida IV, 2, 4-6

Evans.

Go you and where you find a maid
There ere she sleep thrice her prayers said,
Raise up the organs of her fancy,
Sleep she as sound as careless infancy.

Merry Wives of Windsor, V, 553-59

Glendower.

And rest your gentle head upon her lap,
And she will sing the song that pleaseth you
And on your eyelids crown the god of sleep.

I Henry IV, III, 1, 214-221

Tamora.

Whiles hounds and horns and sweet melodious birds
Be unto us as is a nurse's song
Of lullaby to bring her babe asleep.

Titus Andronicus, II, 3, 27-29

* Paper read at the twenty-seventh annual meeting of the American Association of the History of Medicine, New Haven, May 6, 1954.

What shall be said concerning the sleep of King Lear at the climax of the play? Delusions and incoherence are marked features at this time. Lear is finally prevailed upon to enter the rude farm house, and the sleep that follows is very simply expressed:

Lear. Make no noise; draw the curtains. So, so, so.
We'll go to supper i' th' morning, So, so, so.
King Lear, III, 6, 88-90

2. Disturbed Sleep.

Paulina.
Not so hot, good sir!
I come to bring him sleep. 'Tis such as you,
That creep like shadows by him and do sigh
At each his needless heavings—such as you
Nourish the cause of his awaking.
Winter's Tale, II, 3, 33-39

Iago.
Not poppy nor mandragora,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou ow'dst yesterday.
Othello, III, 3, 330-333

Lady Percy.
O my good lord, why are you thus alone?
For what offence have I this fortnight been
A banish'd woman from my Harry's bed?
Tell me, sweet lord, what is't that takes from thee
Thy stomach, pleasure, and thy golden sleep?
I Henry IV, II, 3, 40-65

King.
How many thousand of my poorest subjects
Are at this hour asleep! O sleep, O gentle sleep!
Nature's soft nurse, how have I frighted thee,
That thou no more wilt weigh my eyelids down
And steep my senses in forgetfulness?
II Henry IV, III, 1, 4-31

Weary with toil, I haste me to my bed,
The dear repose for limbs with travel tired;
But then begins a journey in my head
To work my mind when body's work's expired.
Sonnet 27

Leontes.
To see his nobleness!
Conceiving the dishonour of his mother,
He straight declin'd, droop'd, took it deeply,
Fasten'd and fix'd the shame on't in himself,
Threw off his spirit, his appetite, his sleep,
And downright languish'd.
Winter's Tale, II, 3, 12-16

Both *Macbeth* and *Julius Caesar* deal extensively with disturbed sleep. In these plays the lines are arranged in serial order because they show the origin and course of the disturbed sleep.

Just as soon as King Duncan learns of the triumph of Macbeth over

the rebels he sets out to Inverness. The King has already rewarded Macbeth but he wishes to make a personal visit.

The climate, the locale, and the very air seem just right.

Macbeth. This castle hath a pleasant seat. The air
Nimbly and sweetly recommends itself
Unto our gentle senses. (I, 6, 1-4)

Behind the scenes dark plots are forming and Macbeth breaks the calmness by these somber words:

Macbeth. Methought I heard a voice cry, Sleep no more!
Macbeth doth murder sleep. (II, 2, 35-36)

The words of the doctor and the gentlewoman show even greater distress in Lady Macbeth.

Gent. Since his Majesty went into the field I
Have seen her rise from her bed, throw her
Nightgown upon her, unlock her closet. . . .
And again return to bed; yet all
This while in a most fast sleep. (V, 1, 4-14)

In *Julius Caesar* the situation is also quite climactic. Referring to his boy Lucius, Brutus says:

I would it were my fault to sleep so soundly. (II, 1, 4)

In a soliloquy he remarks:

Since Cassius first did whet me against Caesar
I have not slept. (II, 1, 61-62)

Later, Brutus says:

I have been up this hour, awake all night. (II, 1, 88)

Later, he admonishes Lucius:

Enjoy the honey-heavy dew of slumber.
Thou hast no figures, nor no fancies
Which busy care draws in the brains of men;
Therefore thou sleepest so sound. (II, 1, 230-233)

Still later the climax arrives in Brutus' tent. Lucius begins to play but soon falls asleep. Brutus remarks:

This is a sleepy tune. O murd'rous slumber!
If thou dost nod, thou breakest thy instrument;
I'll take it from thee. (IV, 3, 267 and 271-272)

The reference to the broken instrument suggests the disaster that lies ahead.

3. Sleep Due to the Action of Drugs.

While alcohol is seldom consumed to produce sleep, it and other drugs are mentioned.

Parolles. Drunkenness is his best virtue, for he will be swine-drunk, and in his sleep he does little harm.
All's Well that Ends Well, IV, 3, 285-289

Lady Macbeth added something to the wine for the two chamberlains who were to guard King Duncan.

Lady M.
When Duncan is asleep
(Whereto the rather shall his day's hard journey
Soundly invite him), his two chamberlains
Will I with wine and wassail so convince
That memory, the warder of the brain,
Shall be a fume, and the receipt of reason
A limbeck only.
Macbeth, I, 7, 61-70

Archidamus.
We will give you sleepy drinks, that your senses (unintelligent of our insufficience) may, though they cannot praise us, as little accuse us.
Winter's Tale, I, 1, 14-17

The doctor refers to "herb" medicine when he mentions "simples."

There is means, madam.
Our foster nurse of nature is repose,
The which he lacks. That to provoke in him
Are many simples operative, whose power
Will close the eye of anguish.
King Lear, IV, 4, 11-15

4. Sleep and Death.

The lines dealing with this problem are found mainly in *Romeo and Juliet*. While there are states of narcolepsy and other conditions that somewhat closely simulate death, yet it may be wise to pass over this group as stage conventions.

Friar.
Lady, come from that nest
Of death, contagion, and unnatural sleep.
Romeo and Juliet, V, 3, 151-159

Balthaser.
Then she is well, and nothing can be ill.
Her body sleeps in Capel's monument,
And her immortal part with angels lives.
Romeo and Juliet, V, 1, 17-19

Friar.

Take thou this vial, being then in bed,
And this distilled liquor drink thou off;
When presently through all thy veins shall run
A cold and drowsy humour; for no pulse
Shall keep his native progress, but surcease.

Romeo and Juliet, IV, 1, 93-106

Oberon.

And from each other look thou lead them thus
Till o'er their brows death-counterfeiting sleep
With leaden legs and batty wings doth creep.

Midsummer Night's Dream, III, 2, 363-372

Caesar.

O noble weakness!
If they had swallow'd poison, 'twould appear
By external swelling; but she looks like sleep,
As she would catch another Antony
In her strong toil of grace.

Antony and Cleopatra V, 2, 348-351

Discussion

One important question to be answered is: why did Shakespeare write so much about sleep? Bucknill suggested this answer: "There are few subjects that Shakespeare has treated with more pathetic truthfulness than the distress arising from the want of sleep; so much so that the thought intrudes itself that he must in his own person have experienced this penalty of mental excitement exceeding the limits of health."

Recently Watson (4) expressed a similar view. Pomeranz (3) states the insomnia theory as follows: "That Shakespeare himself suffered from insomnia is evident from a reading of the plays. There are scores of allusions to the loss of sleep. It may have been due, in his case, to money troubles or hard mental work."

This is another way of saying that Shakespeare projected himself into the plays. So far as the time period is concerned, sleep is mentioned in about equal amounts throughout the comedies, tragedies, and histories. To conclude that he wrote extensively about sleep because he himself did not sleep well is to argue in a circle and at the same time to question his ability as a poet. Maybe he could write extensively about sleep because he was a diligent student of all the activities which characterized the strenuous life of the Elizabethan period. There is no reason to suppose he had formal courses in law, medicine, navigation, carpentry, archery, gardening, yet he made frequent references to these and many other trades and professions. Shakespeare is not to be considered a learned man so far as formal education is concerned, but he was exceedingly well informed about the everyday life of his times.

The internal evidence certainly does not suggest that Shakespeare was at any time projecting himself into any of the characters in any play. He certainly could depict bereavement, but he did not have to lose a son to know how parents felt under such circumstances.

Brutus, Macbeth, Iago, Portia, Desdemona, and all the other personalities are real in the sense that they are acting and speaking for themselves. They are the ones that brought credit or discredit to themselves. Shakespeare wrote about sleep in all its aspects and gave consideration to all types.

In *The Tempest* he reminds us (IV, 1, 148-156):

> These our actors,
> As I foretold you, were all spirits and
> Are melted into thin air;
> And like the baseless fabric of this vision,
> The cloud-capp'd towers, the gorgeous palaces,
> The solemn temples, the great globe itself,
> Yea, all which it inherit, shall dissolve,
> And, like this insubstantial pageant faded,
> Leave not a rack behind. We are such stuff
> As dreams are made on, and our little life
> Is rounded with a sleep.

REFERENCES

1. Bucknill, John C., *The Medical Lore in Shakespeare*. Longman, London, 1860.
2. Kittredge, George L., *The Works of Shakespeare*. Ginn & Co., New York, 1940.
3. Pomeranz, Herman., Medicine in the Shakespearian Plays and Era. *Medical Life*. 41:492-513, 1934.
4. Watson, Thomas., *Ann. Med. Hist.* N. S. 8:249-265, 1936.

RECENT STUDIES OF THE YOUNGER FREUD *

RICHARD L. SCHOENWALD

Who can look at the features and the thinking of the old Freud and not be stirred? The historian asks *how* Freud came to be the impressive and imposing figure of the later photographs and the great collected editions. Here the historian will turn from the end to the beginning. To appreciate the meaning of the patriarchal Freud entails grappling with his younger self. Over the last thirty years several encounters of this kind have taken place. A full triumph remains far off. There is hope, however, for even now the Freud of 1895 or 1900 is more real and more understandable than he has ever been.

Freud did not suddenly stop being young. It is only a convenience to split his life and work at 1895 or 1900. To do this makes some tasks lighter, for the student's time and energy have their limits. There is, in addition, a special atmosphere about Freud's earlier study and toil. Here is a time of preparation, a time of making ready. Nevertheless the historian should not blot out his awareness that Freud is a whole, going on in time, not shaking off what he was, but always melting that past and casting it into the mold of a new future.

The historian need not have lived very long with Freud, the seeker after motives, to feel uneasy about his own interest. As a base, he must satisfy himself that he stays free of both the hostility and the worship often evident in earlier approaches. It will be enough, then, that he wants to understand; that he wants to gain, not the whole truth, but as much truth as industry, reflection, and chance will grant him.

The history of psychoanalysis *is* largely the history of Freud. His own attempts at a more or less conventionally historical account go back to his lectures at Clark University in 1909. "The History of the Psychoanalytic Movement" (1914) and the *Autobiography* (1925) have reached the largest audiences. In them and in shorter pieces of this kind, as throughout the huge mass of his work, Freud set down much about himself, about his training, about his medical experience.[1] Yet he was only a man, and he could not see everything.

* Read at the twenty-seventh annual meeting of the American Association of the History of Medicine, New Haven, May 8, 1954.

To those who read this essay with patience and with care the writer offers his thanks.

[1] Translated by Harry W. Chase, Freud's lectures at Clark appeared as "The Origins and Development of Psychoanalysis" in *The American Journal of Psychology*, XXI

Attempts to sketch what Freud did not catch began quite early. In 1914 Dr. Luise v. Karpinska indicated a possible tie of Freud to the work of the philosopher Herbart, a connection which others developed later.[2] It was not long, either, before writers were claiming that they could turn Freud's technique back upon him. The partial distortions which may result from such " wild " analyses, to use Freud's apt term, appear in the first of Fritz Wittels' books (1924).[3] Along with these bendings of reality there come new and interesting perceptions as well. Much of what Wittels deduced has stood up. The need for a curb on such operations, however, becomes clear when the historian calms down and notices that he actually cannot check the validity of a bright idea gained from a new reading of an account of a dream by Freud. He cannot put an interpretation *to* Freud in the way an analyst puts a suggested reading of experience to his patient. Then he must work with great caution in handling psychoanalytic deductions made by analysts and others, including himself. Truth here is at best very fragmentary, and the extent to which it is truth finally remains unknowable.

By the early 1930's Freud had become respectable enough to serve as the topic for an academic thesis. In her *Historische Grundlagen der Psychoanalyse*[4] Dr. Maria Dorer made an excellent start at scanning the record of Freud's education. She developed the link to Herbart, taking it through the work of Fechner and others, and she directed attention to some other very striking ideas which Freud gained from teachers and

(1910), 181-218. They have been reprinted in *An Outline of Psychoanalysis*, J. S. Van Teslaar, ed., (New York, 1925), 21-70, and separately as well (Chicago, 1949). A. A. Brill's translation of " The History of the Psychoanalytic Movement " is included in his collection *The Basic Writings of Sigmund Freud* (New York, 1938), 933-971. Sigmund Freud, *Collected Papers* (London, reprinted 1949-1950), I, 287-359, offers Joan Riviere's version of this essay. James Strachey has translated Freud's *An Autobiographical Study* (London, 1948). Two other reckonings by Freud of what was past and what that past meant deserve explicit mention: " Psycho-Analysis," James Strachey, tr. *Collected Papers* (London, 1950), V, 107-130; " Psychoanalysis: Exploring the Hidden Recesses of the Mind," A. A. Brill, tr. *These Eventful Years. The Twentieth Century in the Making* . . . (London, New York, 1924), II, 511-523. Freud wrote both in the early 1920's.

[2] " Über die psychologischen Grundlagen des Freudismus," *Internationale Zeitschrift für ärztliche Psychoanalyse*, II (1914), 305-326.

[3] *Sigmund Freud: His Personality, His Teaching and His School*, Eden and Cedar Paul, trs. (New York, 1924). Wittels, for several reasons, later reconsidered a part of what he wrote here and offered a second interpretation of Freud: *Freud and His Time* (New York, 1931); " Revision of a Biography," *Psychoanalytic Review*, XX (1933), 361-374.

[4] (Leipzig, 1932).

friends. She pointed out among such concepts which held on deep in his thinking his notion of energy.

Yet her knowledge of the vast bulk of Freud's pre-analytic work was scanty. From articles by Rudolf Brun, in 1936, and S. E. Jelliffe, in 1937, scholars did gain the first reliable impression of what lay buried in his early papers and monographs.[5] For some years, though, the course of studies of Freud veered away and turned in other directions. A kind of generalized biographical outline came into circulation and passed from one writer to the next. Helen Puner's *Freud: His Life and His Mind*[6] consists mainly of facts long familiar mixed with rickety interpretations. Gregory Zilboorg's recent *Sigmund Freud* is not very different.[7] When Iago Galdston reviewed what had been done on and to Freud by 1949, he had to admit that the work of Wittels came fairly near the top, defective though it was.[8] Interesting attempts to order the pattern of Freud's most crucial thinking, such as Paul Bergman's "The Germinal Cell of Freud's Psychoanalytic Psychology and Therapy,"[9] remained efforts only, for the supporting evidence did not support to the extent of real conviction.[10] Only more work could bear out the insights of such essays.[11] This work would have to be serious and thorough; it could not halt short of the hard and vital questions and simply repeat the old biographical outline, tricked out with a few new facts.

[5] R. Brun, "Sigmund Freuds Leistungen auf dem Gebiete der organischen Neurologie," *Schweizer Archiv für Neurologie und Psychiatrie*, XXXVII (1936), 200-207; Smith Ely Jelliffe, M. D., "Sigmund Freud as a Neurologist. Some Notes on His Earlier Neurobiological and Clinical Neurological Studies," *Journal of Nervous and Mental Diseases*, LXXXV (1937), 696-711.

[6] ([New York], 1947).

[7] (New York and London, 1951). While the book was planned as a kind of extended introductory essay, its biographical sections fail to show the solidity which Zilboorg's *A History of Medical Psychology* (New York, 1941) perhaps would lead the reader to expect.

[8] "Sigmund Freud: A Critical Summary and Review," *Isis*, XL (1949), 316-327.

[9] *The Yearbook of Psychoanalysis*, VI (1950), 51-73.

[10] Recently a German medical student has published a convenient summary of some aspects of Freud's pre-analytic work, but he has not succeeded really in pointing out any significantly new features: Rainer Spehlmann, *Sigmund Freuds neurologische Schriften* (Berlin, Göttingen, Heidelberg, 1953).

[11] Though David Riesman's readings of Freud disregard historical time, going along by grouping expressions drawn from several periods of his life, they, too, contain insights which the student may consider: "The Themes of Work and Play in the Structure of Freud's Thought," *Psychiatry*, XIII (1950), 1-16; "Authority and Liberty in the Structure of Freud's Thought," *ibid.*, 167-188; "The Themes of Heroism and Weakness in the Structure of Freud's Thought," *ibid.*, 301-315. In *Individualism Reconsidered* (Glencoe, 1954), 306-307, Riesman replies to the criticism advanced here.

There are two very considerable students of the younger Freud who now stand apart from all others. Siegfried Bernfeld's papers remain scattered, a year after his death. He would not think in terms of a book but contented himself with carefully worked out discussions of important topics. A lay analyst who was long a member of the Freud circle, and a Ph. D., he used all of these parts of himself as aids in looking more closely into Freud.[12] On the whole, he observed clearly and steadily.

His first paper, done with the help of his wife, brought together scattered materials on Freud's earliest years. Here, as in other essays, Bernfeld did not neglect psychoanalytic readings of his facts. At times he pressed too hard, concluding far too much from far too little. Occasional flights aside, he brought to the problem set in Freud's life and thinking a scholarship unusual for an analyst and an imagination unusual for a historian. Surely one of his finest contributions exists in his study of Freud's experience with the physicalistic physiology of Helmholtz and his group. Now the historian can offer a fairly full account of the origin of some of Freud's most familiar concepts. Bernfeld kept on, showing that a paper by Freud on "screen memories" actually covered an autobiographical statement, portraying at length Freud's initiation into science, tracing his preparation for the practice of medicine and his first efforts as a working physician. His last paper examined Freud's experiments with cocaine, about which much confusion existed.[13] Bernfeld left these papers, a valuable collection of Freudiana, and a debt on the part of students who found him everlastingly helpful and interested.

Ernest Jones, who alone can rank with him, has written a good and a noble book; it is not perfect.[14] It is so much better, however, than any

[12] Notices of Bernfeld's death appear in *The Journal of the American Psychoanalytic Association*, I (1953), 760, and *The International Journal of Psycho-Analysis*, XXXIV (1953), 358. There are obituaries by Gregory Zilboorg, *Psychoanalytic Quarterly*, XXII (1953), 571-572, and by Norman Reider, M. D., *J. Amer. Psychoanal. Assoc.*, II (1954), 378-379.

[13] Siegfried Bernfeld and Suzanne Cassirer Bernfeld, "Freud's Early Childhood," *Bulletin of the Menninger Clinic*, VIII (1944), 107-115. These list only Siegfried Bernfeld as author: "Freud's Earliest Theories and the School of Helmholtz," *Psychoanal. Quart.*, XIII (1944), 341-362; "An Unknown Autobiographical Fragment by Freud," *American Imago*, IV (1946), 3-19; "Freud's Scientific Beginnings," *ibid.*, VI (1949), 163-196; "Sigmund Freud, M. D., 1882-1885," *Int. J. Psycho-Anal.*, XXXII (1951), 204-217; "Freud's Studies on Cocaine, 1884-1887," *J. Amer. Psychoanal. Assoc.*, I (1953), 581-613. Mrs. Bernfeld's name again joins that of her husband at the head of: "Freud's First Year in Practice, 1886-1887," *Bull. Menninger Clinic*, XVI (1952), 37-49. She has published an interesting study alone: "Freud and Archeology," *American Imago*, VIII (1951), 107-128, which partly bears on the earlier period of Freud's life.

[14] *The Life and Work of Sigmund Freud.* Volume 1: *The Formative Years and the*

reasonable expectation would have had it that all who read it must be constantly amazed. In handling explosive material Jones has worked with undisturbed balance and with the assurance that comes from knowing himself and his subject. Certainly he does not reach the bottom of some questions, such as literary and philosophical "influences." Assuredly he has not been able to print some documents in full or even in part.[15] Without doubt he could not hold back all of the expressions of his own temperament. Still, when these objections have been put forward and allowed to stand, and they must, the achievement remains.

The major events of Freud's earlier life can now be described with substantial accuracy as far as their purely factual aspects go. Dates, names, sums of money are on the record. More will be added from time to time, but the lines of the structure stand out clearly, and there is no good reason to believe that they will change very greatly. As for the meaning of these facts to Freud, here surely the student may work on safer ground because Jones has straightened the factual account, and because Jones, the close associate of Freud, himself has furnished insights of value into Freud's emotional life. Jones follows out the workings of Freud's need to understand the phenomena he observed. If a single explanation of what motivated Freud must be sought, it will be found here.[16]

No student who is truly a student could ask rightfully that Freud's biographer utter the final word here and now. With Jones, however, the student can say a glad farewell to the biographies of the past and go forward to use the rich new materials available in many forms. A part of Freud's library from precisely these earlier years rests in New York.[17] It deserves at least a catalogue, and many of its volumes repay a little time given them. Scattered widely in publications and in private hands are photographs of Freud which should be reproduced before they disappear forever.[18] Students may be allowed the vision of a time when

Great Discoveries 1856-1900 (New York, 1953). Jones makes clear in his preface the degree to which the work of the Bernfelds helped him (I, xiv).

[15] *Ibid.*, 120-121.

[16] The writer has followed out this assertion and enlarged on other statements here put baldly in an unpublished doctoral dissertation, *Sigmund Freud: The Origins and Early Development of a Social Theory* (Harvard University, 1952).

[17] "Notes and News," *Psychoanal. Rev.*, XXVII (1940), 507; "Brands from the Burning," *Time*, XXXVII, no. 4 (January 27, 1941), 30.

[18] Some fine pictures relating to various times in Freud's life appear in *Du*, 11. Jahrgang (Oktober, 1951), 27-36.

all of Freud's pre-analytic publications will be reprinted in scholarly editions.[19]

Last year Freud's very important book *On Aphasia* did appear in an adequate translation.[20] The translator's critical apparatus could have shown higher power and more effectiveness. Very soon a more important translation will come out, the first rendering of the letters and drafts which Freud sent to his friend Wilhelm Fliess between 1887 and 1902.[21] They hold a high drama: Freud discovers a knowledge of himself that would crack mysteries inside others as well. They will not make much sense without understanding the whole of Freud's life, which they express. Now a new volume joins the list of his books which have to be read, and read again, and read over and over. Those who have used the excellently edited German edition already know this.[22] True, there are deletions, but there is enough substance for years of inquiry. Those who use the English edition will find the clarity and care of the translators, Eric Mosbacher and James Strachey, to be dependable aids.

The student meets other helps. A little autobiography by Freud's collaborator, Josef Breuer, has been rescued and reprinted in translation.[23] A great project to be known as The Sigmund Freud Archives has gotten under way. Its aims are not modest, and this is fine. The directors want to assemble all the letters to and from Freud they can locate, to take statements from those who knew Freud in any role, and to collect a complete bibliography.[24] Students will hope that the protection to be

[19] In 1897 Freud listed and abstracted most of these works: "Bibliographie und Inhaltsangaben der Arbeiten Freuds bis zu den Anfängen der Psychoanalyse," *Int. Z. Psychoanal. und Imago*, XIV (1940), 69-93 (reprinted in *Gesammelte Werke*, I, 461-488). Horace Gray, M. D., has supplied further bibliographical details which lighten the work of digging among dusty journals: "Bibliography of Freud's Pre-Analytic Period," *Psychoanal. Rev.*, XXXV (1948), 403-410.

[20] Dr. Sigm. Freud, *On Aphasia. A Critical Study*, E. Stengel, M. D., tr. (London, 1953).

[21] *The Origins of Psycho-Analysis. Letters to Wilhelm Fliess, Drafts and Notes: 1887-1902*, Marie Bonaparte, Anna Freud, Ernst Kris, eds., Eric Mosbacher and James Strachey, trs. (New York, 1954).

[22] *Aus den Anfängen der Psychoanalyse* . . . (London, 1950). For further discussion of the history of these letters, see: Ernst Kris, "The Significance of Freud's Earliest Discoveries," *Int. J. Psycho-Anal.*, XXI (1950), 108-116; Rudolph M. Loewenstein, "Freud: Man and Scientist," *Bulletin of the New York Academy of Medicine*, XXVII (1951), 623-637.

[23] C. P. Oberndorf, ed. and tr., "Autobiography of Josef Breuer (1842-1825)," *Int. J. Psycho-Anal.*, XXXIV (1953), 64-67.

[24] "The Sigmund Freud Archives," *ibid.*, XXXII (1951), 333-334; "Notes," *Psychoanal. Quart.*, XX (1951), 660; "Freud Archives Seeks Material," *Journal of the*

given this treasure, security necessary because of its emotional and intensely personal nature, will not be unduly narrow.

As the *Gesammelte Werke* nears completeness, a great new edition makes its appearance in English.[25] Its first volumes excite admiration and confidence. With James Strachey's version of *The Interpretation of Dreams*, and such studies as those by Edith Buxbaum, Ernst Kris, and Erik H. Erikson, who have used the Fliess letters on problems of the dream, much may be expected from future amalgams of text and commentary.[26]

There is one difficulty in trying to suggest what can be done with these next texts and other resources: it is hard to keep the list short. Each student will make his own. Freud's more remote ancestry, for instance, remains largely unknown, though Bernfeld and others have tried to hunt it down. Tied to this must be the whole question of religion's part in his youth and in his later years,[27] whether or not he admitted such a part.

Freud was a physician, and his changing and shifting attitudes to the relation of doctor and patient merit investigation. No reader can finish Jones' book without being aware that Freud led a professional life. Yet the formal and informal organization of Viennese medicine in Freud's earliers years of practice has been largely ignored.[28] This will not cause

American Medical Association, 147 (November 17, 1951), 1149; "Sigmund Freud Archives, Inc.," *J. Amer. Psychoan. Assoc.*, II (1954), 374.

[25] *Gesammelte Werke*, Anna Freud, E. Bibring, W. Hoffer, E. Kris, O. Isakower, eds., Bände I-XVII (London, 1940—). The last volume, still to appear, will index the set. *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, James Strachey, ed. (London, 1953—). Volumes IV, V and VII have come out. The series will contain twenty-four volumes.

[26] Edith Buxbaum, Ph. D., "Freud's Dream Interpretation in the Light of his Letters to Fliess," *Bull. Menninger Clinic*, XV (1951), 197-212; Ernst Kris, Ph. D., "New Contributions to the Study of Freud's *The Interpretation of Dreams*. A Critical Essay," *J. Amer. Psychoan. Assoc.*, II (1954), 180-191; Erik Homburger Erikson, "The Dream Specimen of Psychoanalysis," *ibid.*, 5-56.

[27] An obvious reference would be: "On Being of the B'Nai Brith," *Commentary*, I (1946), 23-24 (*Ges. Werke*, XVII, 51-53).

[28] The studies of Oswald Hall suggest ways of approach: "The Informal Organization of the Medical Profession," *Canadian Journal of Economics and Political Science*, XII (1946), 30-44; "The Stage of a Medical Career," *American Journal of Sociology*, LIII (1948), 327-336; "Types of Medical Careers," *ibid.*, LV (1949), 243-253. As a sample of the material to be sought, note: S. Rosenfeld, "Ueber die Lage des ärztlichen Standes," *Wiener medizinische Blätter*, 18 (3. Januar, 1895), 5-8.

much surprise to those who reflect on the lack of usable biographies for two of the physicians who affected Freud most, Charcot and Meynert.[29]

There is much to be done. To get to the heart of the man, to understand his choice of a profession, to explore what science meant to him, following hints such as those furnished by Lawrence Kubie [30] in considering scientists of the present—to fulfill such ends means advancing slowly and with effort. The lesson of these earlier studies of Freud is that the historian *can* know him. If he would know Freud in all his being, the historian must in turn apply all that he has, his training, his conscience, his imaginative insight. A great and good task has been given the historian. He must not forsake it.

[29] The sketches and references in Webb Haymaker, ed., *The Founders of Neurology* (Springfield, Ill., 1953), may furnish a line from which to start.

[30] "Some Unresolved Problems of the Scientific Career," *American Scientist*, XLI (1953), 596-613, XLII 1954), 105-112.

NOTES AND COMMENTS

THE ETYMOLOGY OF THE TERM "SYPHILIS"

LEO SPITZER

It is well known that the term "Syphilis" occurs first in the third book and in the title of Fracastoro's didactic epic *Morbus gallicus sive Syphilis*, published in 1530, but the origin of this word which was to replace a great number of coinages, that had come into being at the end of the 15th and the beginning of the 16th century in consequence of the appearance at that time of the new disease, is not yet quite clear. The term must have been unknown to Fracastoro at the time when he was writing the first two books in which he called the disease by the traditional popular name *morbus gallicus*.

Franz Boll in *Neue Jahrbücher* XXV (1905), pp. 72 seq., pointed out that the myth, told by Fracastoro in the third book, of the shepherd *Syp(h)ilus* who challenged the gods by introducing a divine cult of his King Alcithous in the island of Ophyra (that is, in the newly discovered Haiti) and was, along with his king and his compatriots, punished by the gods with the terrible disease, is patterned on the similar myth of Niobe as told by Ovid in his *Metamorphoses* VI, 146 seq., and that the name of the shepherd Syphilus, from which Fracastoro derives the name of the illness *syphilis*[1] and, secondarily, the title of his epic, must, in spite of the difference in the quantity of the first syllable (*Sȳphilus* in Fracastoro's text), be related to *Sȳpilus* (in some manuscripts *Syphilus*), the name of the second son of Niobe and of the mountain where Niobe was changed into stone. In this free handling of Greek mythological material for the purpose of his contemporary epic, Fracastoro proceeded as was his custom: the story of the hunter *Ilceus*, in the second book, who sinned by killing a stag sacred to Diana, is patterned on a similar Ovidian story about Agamemnon, and the name of the former is an alteration of that of the hunter Hyleus also found in Ovid.

In the Johns Hopkins *Bulletin of the Institute of the History of Medicine* II (1934), pp. 516 seq., Professor Hendrickson has raised two important objections against Boll's theory:

[1] "a primo (Syphilo) traxit cognomina morbus, syphilidemque ab eo labem dixere coloni."

1) Boll has not taken into account the fact that the story as conceived by Fracastoro is a typical (pseudo-) ancient " aetiological myth " in which the name of the heros eponymos is inferred from the actual existing name of the phenomenon which legend takes it upon itself to explain (of the type *Rom(ul)us* inferred from the existing city *Roma*). Consequently *syphilis* as the name of the disease must already have existed before Fracastoro was able to think of Ovid's *Syp(h)ilus*.

2) Boll has not considered the occurrence, in the prose work of Fracastoro *De contagione*, published in 1546, in a chapter teeming with Greek medical terms written in Greek characters, of the term **σίφηλις** listed among skin diseases such as **ἀλωπεκία** and **ἀχώρ**.

From this datum Hendrickson infers that **σίφηλις** (*syphilis*) must have been one of the numerous contemporary names of the disease that Fracastoro secondarily connected with the Ovidian story of *Syp(h)ilus* (whose name however appears with correct scansion in another verse composition of Fracastoro's as *Sȳphilus*). While **σίφηλις** is unknown to classical Greek medical authors, it may, according to Hendrickson, be explained from ancient Greek word material: the adjective **σιφλός** (also **σιπαλός**) appears in the Alexandrine period in the meaning ' shameful, hideous, deformed '; in glosses (Hesychius etc.) this word appears specialized to the idea of ugliness or deformity of the eyes and is preserved in modern Greek (in the form **τσίμπλος**) in the meaning ' bleary-eyed.' From this adjective a noun may have been formed according to the pattern **αἱμόρροος—αἱμορροίς**: it would have been ***σιφλίς**, first meaning an eye disease, but then transferred to ' syphilitic ophthalmia ' and ' syphilis ' in general (just as other names of special diseases were given to the new illness on account of some equality of symptoms, cf. *achores* " scab on the head of children," *mentagra* " an affection beginning at the chin "). How does Hendrickson bridge the gap between the unattested, but correctly formed ***σιφλίς** to the **σίφηλις** (with accent on the first syllable and an interpolated **ι**) attested in *De contagione*? For the change of accent Hendrickson invokes in quite general terms a " recessive accent in Modern Greek." For the interpolated **η** pronounced as *i* (itacism) he alternatively (p. 536) assumes interpolation of a transitional sound which facilitated the pronunciation for Italians of the consonantic cluster *phl* (the phenomenon called " anaptyxis ": cf. *subilimato* for the learned term *sublimato*; I would add It. *cilecca* from Germanic *schleck*, *lanzichenecco* < *Landsknecht*)—or else (p. 540) the influence of the Ovidian name *Syphilus* which Fracastoro associated in his myth with the name of the disease.

Both alternatives, however, carry little conviction. If Fracastoro introduced an *-i-* into a Greek term, either because he had heard it pronounced thus by his fellow Italians or because he wished to make the connection with the myth of *Syp(h)ilus*, it is little understandable, given his knowledge of Greek, that he transliterated the term, used by him in the earlier epic poem, under such a hybrid Greek form in the scholarly treatise *De contagione*. Thus the σιφηλίς of the latter text, unearthed by Hendrickson, adds rather to the difficulties of the etymology—which are already great in themselves. For it is most unlikely for Fracastoro, a humanist imbued with classical lore, to have used a term totally unknown in all Greek medical writing. Also the term σίφηλις is used of a skin disease and σιφλός, its supposed root, is rather specialized for eye diseases. Thus neither phonetically nor semantically is the explanation *σιφλίς > *syphilis* truly convincing.

On the other hand Hendrickson is obviously right in objecting to Boll that the name of the heros eponymos *Syphilus* must be a secondary extraction (although based on Ovid) from the name of the illness *syphilis*, not the reverse. We are then brought to the parodoxical situation that on the one hand *syphilis* must somehow have existed as the name of the disease, but on the other is found nowhere in medical writing before Fracastoro: *syphilis* must be at the same time no creation of Fracastoro's and a creation of his. How should we explain such a glaring contradiction?

Perhaps the assumption may be legitimate that Fracastoro used indeed an existing Greek medical term that was in use at the time when he was writing the third book of his epic, but altered that term in view of the Ovidian Syp(h)ilus. I may propose for consideration the word ἐρυσίπελας 'St. Anthony's fire, the rose' which has been borrowed by Latin: *erysipelas* (attested in Celsus, Isidore, etc.) and which has also been adopted by many Romance languages and dialects, in forms considerably altered owing to its polysyllabic nature (cf. Meyer-Lübke, *Roman. etym. WB* and v. Wartburg. *Franz. etym. Wb.*, s.v. *erysipelas*). The case of the transfer of the name of the disease that consists in inflammation of the skin to that of the new venereal disease is paralleled by the numerous cases, mentioned by Hendrickson himself (p. 532), of the type *epinyktides*, *lichen*, *psora*, *achores*, *alopecia*. Now the term *ĕrўsĭpĕlăs*, with its five short syllables, was unusable in the hexameter and Fracastoro saw himself, as I believe, forced [2] either to abandon the term altogether (just as the

[2] A similar concern of Fracastoro with the metrical fitness of his newly-coined terms is revealed by his change of *Ămĕrĭcă* (with its four short syllables) into the pseudo-Greek form *Ammĕrĭcă* which forms a dactylus (– ⏑ ⏑) plus one length. Perhaps he may

Roman poets consistently replaced *Sĭcĭlĭă* in verse by *Trinacria*)—or to do violence to the word by cutting off its first two syllables (*erysipelas* > **sipelas*), perhaps encouraged in this by the abbreviations of the learned term to be found in Romance vernaculars such as It. *resipola*, Sp. *sarpullido*, or French (and Provençal) dialectal forms such as *archipel*, *ésipèle*, *oripeau*. Since, in addition, connection of *erysipelas* with the myth of *Syp(h)ilus* was essential to the composition of Fracastoro's third book, the abbreviation of *ery]sipelas* (also spelled *erisypelas*) to *syp(h)ilis* (with replacement of *-as* by the more usual suffix of names of diseases *-is*) imposed itself.

When it came to listing in his later *De contagione* the term *erysipelas* among other skin diseases (ἀλωπεκία, ἀχώρ) Fracastoro, in my hypothesis, would have Grecized the term he had himself coined for his epic poem and inserted this coinage of his in a Greek spelling as he did with other truly classical Greek terms in the tradition of Celsus (who uses ἐρυσίπελας in his Latin text): σίφηλις (pronounced *siphilis*) is indeed nothing but the transcription of the term *syphilis* coined by Fracastoro for his epic—the fact that he uses σίφηλις for a skin, not for the venereal, disease seems to me to confirm my hypothesis that *syphilis* was to him indeed an abbreviation from *erysipelas*. The stress on the first syllable of σίφηλις that made difficulties for Hendrickson is thus easily explained: it is the reflexion of the stress found in *erysipelas*. There remains also the possibility that the latter term was abridged, in a manner similar to the Romance dialects, to *sipelas* in contemporary Greek and that such an abridged form suggested to Fracastoro the aetiological legend centering around *Syphilus*. For the scansion *Sȳp(h)ilus*, at variance with that of the Ovidian *Sўp(h)ilus*, I know no convincing explanation, but Hendrickson has also failed to offer one within the context of his theory (but cf. note 2). My hypothesis—it is still far from proven—would then explain the paradox mentioned above: *syphilis* would be at the same time a coinage of Fracastoro's and an alteration of a term existing before him. It is also understandable that the humanist-physician would contrast in Chapter II of *De Contagione* the name *syphilis* used by him with other contemporary names doing injustice to certain peoples (such as *morbus gallicus, italicus*) in the form *nos syphilidem in nostris lusibus* [in my poem] *appellavimus*. Hendrickson writes rightly (p. 530): ". . . this establishes no claim to invention of the word. It merely states that, among possible or existing

have changed *Sўp(h)ilus* into *Sȳphilus* in order to be able to begin the hexameter line with this name.

names, he in his poem had chosen to call the disease *syphilis* "—only I believe that the truly existing name was, not **σιφλίς*, but *erysipelas* which Fracastoro transmogriphied into *syphilis*. On the other hand this change of the name would also fit the words of his contemporary Lillius Gyraldus: " [Fracastorius] de Morbo Gallico, ut vulgo dicimus, ipse *a voce barbara* Syphilida vocat " on which Hendrickson (p. 537) comments thus:

> . . . " barbarism," as a technical term of Greek and Latin grammar, is merely an incorrect or impure form or spelling of a single word (as opposed to " soloecism " which is an error of construction in a group of words). Gyraldus speaks as if he knew and understood the word, but recognized it as in some way incorrect.

Hendrickson, of course, suspected Gyraldus to have known the origin of *syphilis* as Hendrickson saw it (from *σιφλός—*σιφλίς*), but what is sauce for his goose **σιφλίς* is sauce for my gander *ery*]*sipelas*.[3]

[3] Professor Temkin corroborates my hypothesis by the following remarks:

"In Georgics III, Virgil describes an epizootic (also infectious to man) under the name of " sacer ignis " (III, 566). His presentation is somewhat remindful of Fracastoro's poem. In antiquity as well as the middle ages, the name ignis sacer was applied to different diseases, including erysipelas. Renaissance physicians were well aware of the ambiguity of the term as becomes clear from the following passage in Nicolaus Leonicenus' *Libellus de epidemia, quam vulgo morbum Gallicum vocant*, Venetiis 1497: " Plinius enim quem admodum, et Servius in expositione carminis virgiliani. Tempore contractos artus sacer ignis edebat. per ignem sacrum morbum intelligit, quem graeci vocant *ἐρισιπέλατα*. Celsus diversum putavit, et cum ignem sacrum describit . . . videtur herpetem tam comedentem, quam etiam miliarem . . . significare " etc. (Quoted after Sudhoff, *The Earliest Printed Literature on Syphilis*, Florence, 1925, p. 164.) I give this quotation because it is from one of the earliest syphilis tracts by a famous Italian physician and shows that Virgil's ignis sacer, erysipelas, and syphilis entered into the discussion. Thus it seems to me that Fracastoro might easily have been induced to think of erysipelas because of its association with ignis sacer as described by Virgil and because it was common in the early syphilis literature to discuss the relation of ignis sacer and of erysipelas to syphilis. (For other examples see Sudhoff, *op. cit.*, pp. 124, 255, 267, 298; see also I. Bloch, *Der Ursprung der Syphilis*, I, Jena, 1901, p. 75 f.) Of course, I do not imply that Fracastoro actually diagnosed Virgil's ignis sacer as syphilis.—O. T."

MEDICO-HISTORICAL NEWS AND ACTIVITIES

CORRESPONDENCE AND REPORTS

HISTORY OF SCIENCE SOCIETY

Annual Meeting, New York City, December 29-30, 1954

The annual meeting of the History of Science Society was held at the Hotel Commodore, New York City, on December 29-30, 1954, in conjunction with the American Historical Association. There were four sessions for the presentation of papers,* with attendance ranging from about 60 to over 150. The opening session on the morning of the 29th, with Conway Zirkle of the University of Pennsylvania as chairman, was devoted to "Science in Antiquity." In the first paper, on "Ptolemy's Post-Ptolemaic Cosmology," William D. Stahlman of the Massachusetts Institute of Technology called attention to Platonic influence in Ptolemy's use of sphere pieces in his *Hypotheses on the Planets*. I. E. Drabkin of the College of the City of New York, in a paper entitled "Remarks on Ancient Psychopathology," pointed out that Greek physicians had held mental derangement to be a disease and had treated it in a natural and rational manner. In a presentation entitled "Ancient Instruments in Teaching Modern Science," Mark Graubard of the University of Minnesota demonstrated models of devices he had constructed and used in his classes to stimulate interest in the history of science.

The theme of the afternoon session on the 29th, held jointly with the American Historical Association, was "Science and the French Revolution," with Franklin L. Baumer of Yale University in the chair. The opening paper, by L. Pearce Williams of Yale University, on "The Organization of Science During the Revolution," showed how the provincial academies gave way to new societies (mostly agricultural) which emphasized the usefulness of science. Speaking on "The Anatomy of Vandalism," Henry Guerlac of the Institute for Advanced Study analyzed the factors which led to an eclipse of the Académie des Sciences and the ascendancy of the Jardin du Roi. He pointed out that the former was dominated by conservative tendencies and stressed mathematical and physical science, the latter showed liberal political influences and emphasized "approved" natural science. The third paper, by Paul Beik of Swarthmore College, called attention to "Some Reflections of the Revolution in Political Science." Comments on the papers of the session were presented by Pierre Donzelot, Director General of the Ministry of National Education, Permanent Representative of French Universities in the United States.

A session devoted to "Medieval and Early Modern Science" was held on the morning of December 30th, with Pearl Kibre of Hunter College as chairman. Francis J. Carmody of the University of California opened the program with

* A more extensive account of the content of these papers appeared in *Science*, April 15, 1955, vol. 121, pp. 541-43.

"Notes on Thabit b. Qurra's Astronomical Works." In the second paper, on "William Gilbert and Experimental Science," Duane H. D. Roller of the University of Oklahoma called attention to different ways in which Gilbert used the word "experiment." Lynn Thorndike of Columbia University, speaking on "The True Place of Astrology in the History of Science," noted similarities in the objectives of "legitimate" medieval astrology and those of modern science. Comment on the papers by Francis R. Johnson of Stanford University was followed by lively discussion from the floor on the nature of scientific method.

The afternoon session on the 30th, chaired by Donald Fleming of Brown University, consisted of three papers, and discussion, on "American Science in the Colonial Period." In a paper on "The Science of Two Puritans of Massachusetts Bay," Margaret Denny of the University of Rochester described the work of Cotton Mather and Paul Dudley. Speaking on "The 'Near' Quakers of Philadelphia and the American Philosophical Society," Brooke Hindle of New York University showed that Quaker interest in science was a natural consequence of the sect's rational pursuit of knowledge and its concern for *things* rather than *words*. Frederick B. Tolles of Swarthmore College spoke on "The Scientific Activities of James Logan," holding that Logan, through his work in botany and mathematics, was the most distinguished American scientist before Franklin. I. Bernard Cohen of Harvard University commented on the papers and called attention to the need for studies of the scientific attitude in other colonial communities.

A short business meeting of the History of Science Society, presided over by the President, Dorothy Stimson of Goucher College, was held at the close of the afternoon session on December 30th. Details of this will be published in *Isis*. The annual meeting ended on the evening of the 30th with the annual dinner of the Society, with forty present. Raymond J. Seeger, Assistant Director of the National Science Foundation, was the speaker of the evening, with an address entitled "On the History and Philosophy of Science." Dr. Seeger reported that the National Science Foundation is prepared to support projects in the area between natural and social science, including the history of science. The meeting closed with a reminder by Miss Stimson that the annual meeting for 1955 will be held in December in Washington D. C. in conjunction with the American Historical Association, of which Lynn Thorndike is president.

CARL B. BOYER

ANNOUNCEMENTS

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE

At the 28th annual meeting of the Association in Detroit, May 12-14, 1955, Ilza Veith, Ph. D., was elected Secretary-Treasurer for 1955-57. The Executive Committee announced Durham, North Carolina, as the place for the annual meeting in the spring of 1956.

NATIONAL NEWS

American Institute of the History of Pharmacy

A. I. H. P. Notes is being issued as an informal newsletter for the members of the Institute and teachers of the history of pharmacy.

Boston University School of Medicine

On January 17, 1955, at an informal meeting of interested members of the faculty, the Benjamin Waterhouse Medical History Society was organized. A constitution was adopted and the following officers were elected: John J. Byrne, M. D., President; Earl R. Loew, Ph. D., Vice President; David McL. Greeley, M. D., Secretary and Treasurer. The purpose of the Society is to stimulate interest in medical history. Membership in the Society is open to members of the faculty, the student body, and other interested individuals. At the first meeting, February 29, 1955, thirteen members of the faculty and eighteen students were present.

Chicago

The twelfth David J. Davis Lecture in the History of Medicine at the University of Illinois College of Medicine is to be delivered on May 11, 1955, by Ralph H. Major, University of Kansas School of Medicine, who will speak on "Etruria and Tuscan Medicine."

Kansas

The library of the late Dr. Russell L. Haden, containing 75 books on the history of the microscope and 163 on the history of hematology was donated by Mrs. Haden to the History of Medicine Library, University of Kansas Medical Center.

Philadelphia

The Kate Hurd Mead Class Lecture, sponsored by the Woman's Medical College of Pennsylvania and the Section of Medical History of the College of Physicians of Philadelphia, was delivered on April 21, 1955, at the College by Lloyd G. Stevenson of McGill University who spoke on "Biography versus History."

Personalia

Dr. George W. Corner, Director of the Department of Embryology, Carnegie Institution of Washington, and Professor of Embryology, The Johns Hopkins

University, has been elected a foreign member of the Royal Society of London. Dr. Corner is President of the American Association of the History of Medicine, 1954-56.

Dr. Esmond R. Long, Director of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, and a past President of the American Association of the History of Medicine, was honored on Thursday evening, March 10, when the Philadelphia Award, consisting of a gold medal and a check for $10,000, was conferred upon him in recognition of his outstanding work in the field of tuberculosis.

The *Bulletin* congratulates Dr. Corner and Dr. Long on the signal honors received.

Programs of Meetings

Beaumont Medical Club, New Haven

March 25; 1955: Stanley B. Weld, "From Hospice to Hospital in 100 Years"; William W. L. Glenn, "The History of Cardiac Surgery."

Benjamin Waterhouse Medical History Society, Boston

February 28, 1955: John J. Byrne, "Benjamin Waterhouse."

March 28: Earl H. Dearborn, "Therapeutic Agents of the 18th and 19th Centuries."

Mount Sinai Hospital, New York City

October 20, 1954: Milton Glickstein, "Treatment of Scoliosis from Hippocrates to Hibbs" (Discussion, Alvin M. Arkin); Stuart Denmark, "Sepsis, Asepsis and Antisepsis through the Centuries" (Discussion, Gregory Schwartzman).

December 1: Arthur Sicular, "Antonio Beneviene's Pathology" (Discussion Saul Jarcho); Donald Krawitt, "The Evolution of Endoscopy" (Discussion, Stanley I. Glickman).

January 19, 1955: Alan F. Guttmacher, "Accouchement through the Ages" (Discussion, Claude H. Heaton).

February 16: Isadore Mandelbaum, "Growth of American Surgery from the Civil War to the Twentieth Century" (Discussion, Ralph Colp); Robert J. Wilder, "Leonardo Da Vinci and the Heart" (Discussion, Lester Blum).

March 16: Gerald Weissmann, "Art and Anatomy" (Discussion, Henry D. Janowitz); Henry Tankel, "The Origin of Public Health in Great Britain" (Discussion, George Rosen).

April 20: Donald Weisman, "The Barber Surgeons" (Discussion Bernard Simon); Edgar Bick, "The French Influence on American Surgery."

May 18: Harry Sobotka, "Ophthalmology in the Middle Ages" (Discussion, Frederick H. Theodore and Abraham Schlossman).

New York Academy of Medicine, Section on Historical and Cultural Medicine

May 11, 1955: F. B. A. Rundall, "Florence Nightingale's Place in British History"; Margaret G. Arnstein, "Florence Nightingale's Influence on Nursing"; Frank B. Berry, "Florence Nightingale's Influence on Military Medicine."

Society of Medical History of Chicago

April 20, 1955: Memorial meeting to Dr. D. J. Davis held jointly with the Chicago Medical Society. Speakers: Frederick A. Falls, Thomas Kirkwood, and William Mann.

NEWS FROM ABROAD

Germany

The Deutsche Vereinigung für Geschichte der Medizin, Naturwissenschaft und Technik will hold its annual scientific meeting in Kassel, September 24-28, 1955.

Great Britain

Under the title "A Medical Historian in New Zealand and Australia," Dr. Douglas Guthrie of Edinburgh has published an article that contains interesting information on the position of medical history in Australia and New Zealand. The article appeared in the *Proceedings of the Royal Society of Medicine*, Section of the History of Medicine, *47*: 1954, 1059-1060.

The *University of Edinburgh Journal*, Summer 1954, pp. 77-105, prints in full a biography of "Alexander Monro, primus." The biography is from an account in a contemporary manuscript in the possession of the historical section of the library at the Medical School, University of Otago, Dunedin, New Zealand. As Mr. Erlam, Librarian to that school, points out in his introduction, the biography was probably written by Alexander Monro I himself. It reached New Zealand through a son of Monro III together with other manuscripts and books from the Monro library.

India

The Indian Association of the History of Medicine announced the celebration of its eighth anniversary for February 5, 1955, at the Common Hall of the Madras Medical College. A Report printed for that occasion states the objectives of the Association as follows: (1) To bring together, on a common platform, all persons interested in the history of medicine. (2) To arrange lectures, discussions, and exhibitions, to spread the knowledge of the history of medicine in general and of Indian medicine in particular. (3) To publish a journal devoted to critical studies of original researches in Indian medicine, and lists of books dealing with history of medicine in general, and reviews of books dealing with the history of medicine in India, and complete bibliography of books and articles on the history of Indian medicine. The journal will be run by an editor, assisted by an editorial board. (4) To organize a library of old medical classics and books on history of medicine and medical history journals, and obtain photostat copies of, and extracts from, rare books and other facilities for the promotion of knowledge of history of medicine, and to conduct research in history of medicine in India. (5) To help teachers and research workers with references and extracts on the historical aspects of their special subjects relating to medicine in India. (6) To establish contacts and correspondence with similar medico-historical associations and libraries of other countries and arrange for exchange of information and books and lecturers.

BOOK REVIEWS

S. F. Mason: *Main Currents of Scientific Thought.* A History of the Sciences. New York: Henry Schuman, 1953. viii+520 pp. $5.00.

Designed as a textbook, Dr. Mason's work is an attempt to show that the historical roots of science were in "the technical tradition, in which practical experiences and skills were handed on and developed from one generation to another," and a "spiritual tradition in which human aspirations and ideas were passed on and augmented." Our modern science is said to have developed when the two traditions merged. There are six major sections: ancient science, science in the Orient and medieval Europe, the scientific revolution (16th and 17th centuries), 18th century, 19th century, 20th century.

In the main, the book follows the usual kind of pattern, in which the early material is divided into chapters, each one of which represents a chronological period; and the later sections are divided into chapters, each one devoted to a single subject.

Although generally well written and well informed, this book will cause many raised eyebrows. For example, the Hippocratic school of medicine is said to have "originated the doctrine that the human body contains four humours, or juices, the melancholic, the sanguineous, the choleric, and the phlegmatic," and it is said that the theory about health being due to correct proportions of them was probably "based on the observation that four substances may be obtained from blood, a dark clot, representing the melancholic humour, a red fluid, equivalent to the sanguine humour, the yellow serum or the choleric humour and fibrin, which was connected with phlegm." Not only are the four "temperaments" confused with the "humours," but this particular theory of their origin seems somewhat doubtful. In the same chapter we are told that Thales used "the Babylonian Saronic cycle" to predict a solar eclipse, probably that of 585 B. C. Yet the "Babylonian Saros" was not known to the Babylonians at all, and, even if known, could certainly not have been used to predict an eclipse of the sun in the days of Thales. This is a curious error to find in the book, since the author cites in his bibliography for this chapter O. Neugebauer's "The exact sciences in antiquity," in which a large section is devoted to a history of this particular topic.

The reason for pointing out errors of fact that occur in the very beginning of the book is that it may help to explain certain statements that arise later on. For instance, on page 437 we are told that "Kammerer in 1924 observed colour changes in salamanders which he claimed were induced by, and were adaptive to, environmental changes." This seems a curious way of describing the claims of Kammerer, which were shown by Noble to be based on fraudulent "doctored" specimens. Again, to emphasize the practical character of science in America the author states (page 478) that Thomas Edison had "considerable influence upon the formation of the American scientific tradition," a statement supported by a quotation from that great historian of American science, Henry Ford, of motor car fame. It is equally surprising to find on the next page that the National

Science Foundation, established by act of Congress in 1950, contains a clause specifying " that the Foundation should initiate and support such applied researches of a military nature as might be requested by the Secretary of Defence." While it is true that such a clause exists in the act, something might have been said to the effect that the National Science Foundation has acted to originate only basic or fundamental research, which has obviously been its primary function. On page 483, the impression is given that Einstein's position with respect to quantum mechanics agrees with that of " Soviet scientists," but nothing is said of the criticism of Einstein's work itself in the Soviet Union. Many critical readers will object to the statement that in 1948 " the Soviet school of Mendelian genetics was disbanded," when dismembered or decapitated would seem to be more appropriate words. It is equally difficult to understand how anyone writing in the middle of the 20th century can write, " Mendelian genetics, on the other hand, arose from problems encountered in the theory of biology, and it has remained largely an academic subject "—as if hybrid corn and other examples of applied genetics did not exist and as if Lysenko and other Russian Michurinists were the practical men who met success by ignoring Mendelian genetics and substituting a kind of Lamarckism.

Perhaps the most serious fault of this book lies in the author's belief that the most important forces conditioning the growth of science are the practical problems to which scientific results may be applied, and what may be called nationalistic motivations. This emphasis on the technical and the practical is allied to the author's point of view that theories are less useful in the advance of science than the accumulation of empirical data. The only part of science which he finds to have been " cumulative up to the present time " is " its practical techniques and its empirical facts and laws. Judged by a long time scale, the theories of science have been ephemeral hitherto." To be sure, we would agree with the author that most of the scientific theories of today will not remain " unmodified for long." Yet it is equally true that from any point of view there has been great progress in scientific theory, for instance as measured by the degree of accuracy in predictions and the wideness of the range of phenomena embraced.

The critical reader will find throughout that the author's presentation is guided by presuppositions which are not always made clear and which the author rarely attempts to justify. As a result, the book must be used with caution. To such a degree is this true that one may even doubt whether the selection of topics truly embraces the " main currents " of scientific thought.

I. Bernard Cohen

E. O. von Lippmann. *Beiträge zur Geschichte der Naturwissenschaften und der Technik*. Vol. II, edited by R. von Lippmann. Weinheim (Bergstrasse). Vorlag Chemie, 1953. xii + 357 pp. D. M. 21.80.

E. O. von Lippmann (1857-1940) stands in the front rank of classical authors on the history of chemistry and technology. He continued the work of the great Hermann Kopp with hardly less success and claim for immortality than the latter. His work was achieved as a labour of love in the hours of leisure allowed

to the director of a large sugar refinery. It remains one of the outstanding landmarks in the historical representation of science. It is extant in several books, notably the *Geschichte des Zuckers* of 1890 (second edition 1929) and the *Entstehung und Ausbreitung der Alchemie* of 1919. Much of his great work, however, had been scattered in periodicals such as the *Chemiker-Zeitung* and many others. A number of these essays covered fields of a more general interest beyond the history of chemistry—touching on general history, classics and, in particular, medical history. Fortunately, the bulk of these essays have been collected in two works, the *Abhandlungen und Vorträge zur Geschichte der Naturwissenschaften* (vol. I, 1906; vol. II, 1913) and the *Beiträge zur Geschichte der Naturwissenschaften und Technik* (1923). In these, such classical monographs were republished as "Chemisches und Physikalisches aus Plato"; "Chemisches und Alchemisches aus Aristoteles" and especially a series of papers fixing the first production of alcohol by distillation in late medieval times as against the recurrent attempts at ascribing it to antiquity. There is hardly a topic from the history of alchemy and chemistry which had not been dealt with in these essays.

The present book, in which Lippmann's essays published after 1923 have been collected, can therefore be sure of the closest attention. The medical historian will find in it the chemical data which can be collected from the Edwin Smith papyrus, the history of bismuth, Paré's report on a case of carbon monoxide poisoning, R. Bathurst (1620-1704) as an unknown pneumatic chemist, Sam Hahnemann as a chemist and a supplement to von Lippmann's *Urzeugung und Lebenskraft* (Berlin, 1933)—to quote only a few of the items.

In one of these new essays, the author returns to the derivation of Van Helmont's term "Gas" from the Paracelsean "Chaos." This had formed the subject of two of the outstanding essays republished in *Abhandlungen und Vorträge* (vol. II, p. 361 and 365). These contained an extensive collection and analysis of passages in which Paracelsus refers to "Chaos." The essays showed the wide and somewhat vague usage of the word denoting anything vaporous or airy. On the other hand, it must be said in fairness that von Lippmann failed to do justice to the notable scientific advance marked by Van Helmont's concept, chemical determination, and empirical observation of "gas." Quite contrary to his usual practice, in his account of Van Helmont, von Lippmann relied on a secondary source known to be inadequate (namely the collections by J. A. Rixner and Th. Siber, Sulzbach 1826). Owing to this he unduly emphasized Van Helmont's crude speculations on the "Gas Aquae"—a side issue of little importance as compared with his sound scientific observation of various gases, notably carbon dioxide, and the resulting strict separation of "Gas" from air and water vapour. Nor was there any attempt at understanding Van Helmont's quest for the unmasking of the specific "Ens" in objects of nature which he believed to demonstrate in the "New Entity, Gas" (see the reviewer in *The Religious and Philosophical Background of Van Helmont's Science and Medicine* [*Supplements Bull. Hist. Med.*, II] Baltimore 1944). At the time of von Lippmann's writing, depreciation of Van Helmont's achievements had a vogue which was fanned by attempts at extolling the merits of Paracelsus at the expense of Van Helmont. Later on, von Lippmann himself seems to have been conscious of this depreciation, as he readily acknowledged the more favourable light in which Van Helmont

appeared in more recent work (see for example his: "Nachträge und Ergänzungen zur Geschichte des Zuckers." *Zeit. Ver. Deut. Zucker Industrie* 1934, LXXXIV, 878). The main point of the essay re-published in the book under review is E. Darmstädter's derivation of Gas from the Paracelsean "gaesen" and not from his expression "Chaos." Paracelsus used "gaesen" in connection with wine-must ("Weinmost . . . dieweil er im gaesen ist")—meaning fermentation. Von Lippmann finds this derivation from "gaesen" unconvincing and refers to a passage from Van Helmont's *Dageraad* (1660) where "gas" and "chaos" occur in the same passage—"aus water gas . . . das ist das grosse water chaos." (Incidentally the "ghost" of a 1615 edition of the "Dageraad" referred to in this essay is another product of Rixner and Siber).

Important sidelights on "Romantic" medicine and science are found in the brilliant essay on the "Alter und Herkunft des Namens Organische Chemie"; Runge and Goethe, Hermann Kopp as a historian, the four elements in the works of Adelard of Bath and Alexander of Neckham, Dante's treatise De Aqua et Terra —are among the topics treated in this splendid volume. It also contains a full Lippmann-Bibliography compiled by the editor, one of the author's sons, who is a physician practising at Frankfort and to whom the congratulations and the gratitude of scholars are due.

WALTER PAGEL

ANTONIO BENIVIENI. *De abditis nonnullis ac mirandis morborum et sanationum causis. The Hidden Causes of Disease.* Translated by CHARLES SINGER, with a biographical appreciation by ESMOND R. LONG. Springfield, Ill.: Charles C Thomas, 1954. xlvi + 217 pp. Ill. $6.75.

The *De abditis morborum causis* by Antonio Benivieni is the earliest monument of modern pathologic anatomy. Published in 1507, and translated into Italian in 1843, this book is now made available for the first time in English. Consequently the advent of the present volume is a notable occasion for American medical historians and pathologists and offers the opportunity for a reconsideration of the author and his work.

The lifetime of Antonio Benivieni (1443-1502) spanned three major occurrences in the history of the western world—the fall of Constantinople, the invention of printing, and the discovery of America. A typical Florentine of the Renaissance, Benivieni numbered Ficino and Poliziano among his friends. His early education was humanistic; and his extant manuscript writings, rediscovered by Puccinotti, include a few studies of classical authors. Dr. Long states that the inventory of Benivieni's library, compiled in 1487, listed 168 manuscripts on medicine and the humanities and one printed book—a Virgil. It is not surprising that occasional Virgilian touches appear in his writings, e. g. *vox faucibus haereret* (abscess of throat, case CIV), and *monstrum horrendum ingens* (case CXXI, published by Puccinotti).

Antonio Benivieni practised medicine with distinction from about 1470 until his death in 1502. All available evidence indicates that he was highly esteemed. His notes show that he treated priests, nuns, and nobles; the Medici, the Strozzi,

and Guicciardini were among his patients. His portrait is on the ceiling of a room at the Uffizi.

He had intended to compile his records of 300 interesting cases, but life and death alike frustrated this plan. His humanist brother Girolamo later found among Antonio's papers some 158 chapters of clinical notes. From this material Girolamo, aided by the physician Giovanni Rosati, selected 111 chapters, which were published in 1507 in a thin octavo volume. In the book under review the text of 1507 is reproduced in clear facsimile, with Dr. Singer's translation on alternating pages. The materials omitted by the sixteenth-century editors have not been restored; these, as well as the cancelled dedication addressed to Lorenzo Lorenzano, were published by Puccinotti in 1855.

The 111 short chapters published by Beniveni's literary executors and translated by Dr. Singer mention approximately 125 cases and about fourteen autopsies. In many of these case reports the extreme brevity of the exposition makes a retrospective diagnosis impossible; in others the identity of the disease is reasonably clear.

As might be expected, the collection includes many cases of ill-defined fever. There are astonishingly few instances of tuberculosis, among them one of probable Pott's disease. There are many examples of intestinal infection and of helminthiasis. Much of the material is surgical—cases of wounds and other traumata, hernia, gangrene, abscess, stone, fistula, and congenital anomalies. A case of carcinoma of the colon and one of carcinoma of the stomach, both autopsied, are among the best in the book. Cases of psychic disturbance are especially numerous. There is one example of tetanus and one case of shock following the bite of a scorpion.

Of special interest is the material on syphilis. This consists of a single chapter, which is the opening chapter and by far the longest in the book, and is supplemented by a separate report of caries of the skull (chap. XVIII), an obscure case of nasal ulceration (XXVII), and a case of ulceration of the female genitalia (XXXI).

Benivieni states that the disease commonly named Morbus Gallicus was a new kind of malady. It appeared in Italy and nearly all Europe in 1496. *It began in Spain and spread first through Italy and then through France* and other European countries. It is evident that Benivieni has here provided concise but valuable testimony which supports the Columbian origin of the disease. His statement is especially impressive because it must have been recorded within 10 years of the discovery of America and within 8 years of Columbus' suspect second voyage. It will be remembered, moreover, that Benivieni lived and practised in Italy during the invasion of Charles VIII.

The sickness, says Benivieni, starts in the form of pustules, which appear first on the genitals and then spread over the body. These sores are of several distinct types; some lead to erosion. The eruption is preceded or followed by racking pains in the joints.

Treatment is determined by the humoral composition of the pustules and by the degree of admixture of the morbid humors with the blood. Where such admixture is present, phlebotomy is indicated and should be performed at the median basilic vein. Internal treatment aims to resolve the morbid humors and then to evacuate them by purgation. External remedies should be employed to remove and dissolve

the "matter" and to relieve pain; such remedies include innumerable vegetable drugs, as well as litharge and quicksilver. There is as yet no mention of guaiac.

The description of the varied lesions and the discussion of treatment bespeak extensive experience. Indeed, Benivieni states that the disease had attacked most of the inhabitants. A case of congenital syphilis in a newborn infant (case CXXXII) is included in the rejected materials published by Puccinotti and regrettably omitted in the present translation.

Benivieni's discussion of syphilis includes a consideration of the rationale of treatment according to humoralistic conceptions. The application of humoralism in daily general practice is displayed in the report of a case of death from phlebotomy (case L). The wife of a Florentine knight suffered from double tertian fever, for which her physician had proposed phlebotomy.

> . . . I was not absolutely opposed to this course as bile appeared to be mixed with the blood. But as there was also an excess of phlegm, I advised that the vein be opened, but only tentatively to see the colour and condition of the blood. If it was thick and black it should be drawn off in large quantities as diseased, but if, on the other hand, it was red and clear, it should be preserved as being pure . . .

Although humoralistic principles and medieval conceptions of anatomy underlay much of Benivieni's thinking, he also applied a priceless diagnostic and therapeutic principle of another order, viz. common sense. For example, a young man who had had an obstinate deep ulcer of the chin was cured after Benivieni ordered the extraction of a diseased tooth. Another ingredient of Benivieni's effectiveness was a composite of common sense and mechanical skill. This is revealed in the description of a difficult lithotrity performed in a female (LXXX). Excellent surgical judgment is evident in the case (CXXXIV) of fracture of the skull by *contrecoup*.

Although Benivieni employed humoralistic concepts, tempered them with common sense, and applied his knowledge skilfully, his importance in history depends on none of these factors. We remember him for the fourteen autopsies which are mentioned casually, briefly, and almost incidentally in the 111 short chapters of the *De abditis*. To these must be added the few autopsies in the material published by Puccinotti.

The brevity of the autopsy notes is one of their most striking characteristics. Here are two complete "protocols":

> Among the veins called mesaraic there was found a callus. So as these veins were so much obstructed that the blood could pass no further, it was inevitable that the boy should die (XXXVII).
>
> The family ordered the corpse opened; nearly the entire stomach was found calloused, and the cause of death was established (CXXII).

These laconic presentations suggest that autopsies were not rare in Florence at this period, even apart from the judicial autopsies which had been practised since the Middle Ages. If this inference is correct, there must be numbers of additional autopsy reports in manuscript collections which have never been published.[1] It would follow that Benivieni's fame is dependent not upon innovation

[1] Since this was written I have had the pleasure of finding a rather long fifteenth-century non-judical Italian autopsy report by one Bernard Tornius (Thorndike, L.: *Science and Thought in the Fifteenth Century*. New York, 1929, pp. 123-132 and 290-294).

but upon publication and is in part a historians' artefact. I am aware that this conclusion runs counter to the opinion of the magisterial Malgaigne, who wrote "son livre ne doit rien à personne; il est complètement original . . ."

Yet the usefulness of Benivieni's slender observations cannot be questioned. They were reproduced by Bonet, were quoted repeatedly by Morgagni, and entered the swelling stream of medical knowledge.

The present volume opens with an introduction by Dr. Esmond R. Long. This contains everything one would want to know about Benivieni's life, background, and contributions. Dr. Long emphasizes the clinical orientation of the *De abditis* and he reminds us of the curious fact that in the Renaissance morbid anatomy seems to have had an earlier start than normal human anatomy. Thus the *De abditis* preceded the *De fabrica* by 36 years. Dr. Long also performs the helpful service of calling attention to recent Italian and American work on Benivieni.

The translation by Dr. Charles Singer is clear and accurate but at times excessively concise. Thus *cuius umbilicus digitis quattuor excreuerat ad Penis similitudinem*, a perfect description of an umbilical hernia, is rendered *whose navel had grown out four inches long*. Dr. Singer's notes, based on his immense knowledge of ancient, mediaeval, and Renaissance medicine, are in many places indispensable. Yet these also might well have been longer, especially since the book is certain to be consulted by medical students.

There are five illustrations, among them a handsome portrait of Benivieni, reproduced from an anonymous painting in the medical library of Careggi.

SAUL JARCHO

LUIGI GALVANI. *Commentary on the Effects of Electricity on Muscular Motion.* Translated into English by MARGARET GLOVER FOLEY with Notes and a Critical Introduction by I. BERNARD COHEN, together with a Facsimile of Galvani's *De Viribus Electricitatis in Motu Musculari Commentarius* (1791) and a Bibliography of the Editions and Translations of Galvani's Book prepared by JOHN FARQUHAR FULTON and MADELINE E. STANTON. Norwalk, Connecticut: Burndy Library, 1953. 176 pp. Ill.

The preface to this work states that its appearance was planned for 1941 but that through interference of war work it is only recently that the project could be completed. I. Bernard Cohen in his excellent introduction gives his reasons for considering this work of Galvani's so important. Although there are now available records of his laboratory notes as well as memoirs on electricity written before 1791, it is this book *De viribus electricitatis* which was the source of his influence in his day and for which he is still renowned. Professor Cohen traces the ideas about "the electric fluid" from the time of Newton on to Franklin and then to Galvani and Volta, and shows how Galvani made use of Franklin's concept that "the electric fluid gained by any one body must have come from one or more other bodies," a concept which he had derived from experiments with the Leyden jar. The effect of electricity from outside sources had been tried on frogs and

other animals before Galvani published his work, but it was his experiments on "animal electricity" that caught the attention of his contemporaries. He considered this electric fluid to be peculiar to animals and to be found especially in their nerves which passed it on to muscles causing their contraction. Volta, however, was the more skillful in devising apparatus for producing and detecting electrical effects, and it might be mentioned that one of his electrometers which he presented to the Royal Academy of Sciences in Paris was used by Lavoisier and Laplace in experiments at which Volta himself assisted, and which they reported in 1781. It is of special interest that the Latin text reproduced in this Burndy work has been taken from the very copy Galvani presented to Volta. Volta was inspired by Galvani's experiments and at first agreed with him regarding "animal electricity." However, he discarded this idea by 1793, and from this time on his investigations are to be classed as physical and chemical rather than physiological. The controversy over "animal electricity" was an unequal one, and Professor Cohen leaves us with the impression that Volta was the more able investigator, but that since Galvani's *De viribus electricitatis* was the starting point for important developments in all three sciences, physics and chemistry, as well as physiology, it should be of interest to all scientists. After a brief account of Galvani's personal life the Introduction closes with a warning that a readable English translation of Galvani's rather individual Latin is not easy to make, and we find at the bottom of the majority of Dr. Margaret Glover Foley's pages, several lines of annotations furnished by the author of the introductory essay. This reviewer, after solving the riddle of the phrase "MUSUCLAR MOTION" mentioned in the section heading on the first page of the translation, found the English remarkably clear and understandable. Only one other minor typographical error led to confusion. I believe the line on page 83 should read, "through the agency for example," instead of "for through the agency example." I would therefore highly recommend this translation to those who do not themselves have the necessary knowledge of Latin or the patience to deal with the reproduced original text.

The final section is devoted to a bibliography of the editions and translations of Galvani's book prepared by John F. Fulton and Madeline E. Stanton. This is preceded by a short essay in which most interesting light is thrown on the part played by Galvani's ambitious and somewhat vociferous nephew, Aldini, in his attempts to further the cause of "Galvanism."

This effort of the Burndy Library is to be commended and should prove a valuable addition to the volumes devoted to the history of science.

J. M. D. OLMSTED

BENJAMIN FRANKLIN. *Some Account of the Pennsylvania Hospital.* With an Introduction by I. BERNARD COHEN. Baltimore: The Johns Hopkins Press, 1954. xxx + 40 pp. $3.25.

The rare forty page pamphlet, written and printed by Franklin in Philadelphia, 1754, is now re-issued two hundred years later in a handsome facsimile edition. Written to gain support for America's first permanent hospital, the original was

printed in the best style at Franklin's command, with a list of the early donors and an appeal for additional financial support. The DeGolyer copy, now in the University of Oklahoma Library, was used for the facsimile.

Some Account is written in Franklin's plain, lucid style, "homespun splendor hardly to be matched in the English language." It tells the story of the development of an idea, first suggested to him by Dr. Thomas Bond in 1751, of a hospital for the "distemper'd Poor as from Time to Time came to *Philadelphia*, for the Advice and Assistance of the Physicians and Surgeons of that City." Franklin's method of raising funds was first to appeal to the members of the Junto, a private society for mutual improvement, follow this by editorial comment in the *Pennsylvania Gazette* and, finally, once the plan was well under way, petitioning the House of Representatives of the Province of Pennsylvania. In this instance he was successful. The bill was passed, land was obtained and the hospital designed. A house, used as a temporary hospital, with six physicians in charge, was opened in February, 1752. This sufficed until the Hospital was opened a few years later. In the meantime, Franklin was also the chief founder, in 1751, of an academy, later to become the University of Pennsylvania.

As the writer of the Introduction points out, Franklin followed in this instance, as in many others, his Poor Richard advice of 1738: "If you would not be forgotten as soon as you are dead and rotten, either write things worth reading or do things worth the writing." The Pennsylvania Hospital and *Some Account* stand for both.

HENRY R. VIETS

K. M. C. ZEVENBOOM and D. A. WITTOP KONING. ***Nederlandse Gewichten. Stelsels, ijkwezen, vormen, makers en merken.*** Mededeling No. 86 uit het Rijksmuseum voor de Geschiedenis der Natuurwetenschappen te Leiden, 1953. 247 pp. Ill. 6 guilders.

This book, which has been published with the financial support of the Dutch "Genootschap voor de Geschiedenis der Geneeskunde, Wiskunde en Natuurwetenschap" (Society of History of Medicine, Mathematics and Science) has but one shortcoming, namely that it is written in the Dutch language and therefore is not accessible to a larger group of readers.

The authors have treated their subject, the history of Dutch weights, in a thorough way so that it can easily be connected with the history of the Netherlands as well as with the history of ideas and culture in general.

In a short introduction they describe Roman weights and the places where they were found in the Lowlands. Under Charlemagne, however, the Franconians having the supremacy, Charlemagne pounds were used. These were succeeded by the Cologne mark, a sign of the far-reaching influence of the Bishopric of Cologne, an influence which goes parallel with that traced by philologists in the Dutch and German languages. When the House of Burgundy began ruling the Netherlands, it was the Troy pound which came into general use, until in the later 16th century the cities became powerful, self-supporting units and established their own local weights and measures with Amsterdam, Holland's most important city, having the

hegemony. After the fall of Antwerp in 1585, the southern Lowlands came into the hands of Spain, and thousands of refugees poured into the northern provinces, bringing an influx of French-Belgian culture. Since Antwerp was the capital of the province of Brabant, this is known as Brabant influence. Brabant fashions were highly estimated by the ladies and Brabant words penetrated the language of every Dutchman who wanted to show that he was a respectable citizen. No wonder that at this time the Brabant weight became generally used in the North. Thus, weights of different origin were in use and in competition in various parts of the country, and it was only in 1816, after the unification of the Netherlands under King William I, that the metric system was introduced and standardized.

After the historical review, the authors give the development of gauging, the word "to gauge"—Dutch "ijken"—appearing for the first time in the Dutch language in a charter of 1284/5. In early times each city had its own inspector of weights and measures; at present there is one head-gauger with 12 assistants. Every gauger had his own mark which he stamped on the weight after it had been checked. For each year a different letter was stamped on the weight. The authors have compiled an extensive list of marks and year-letters and their respective meanings from the 17th century to the present day. They have also located the place where the gauger worked. In addition, there is a description of all the weights known in trade as well as in the apothecary. Finally follow lists of the marks of the brassfounders and the balance- and weightmakers. Drawings of these marks and photographs of several specimens of weights illustrate the text.

Thus it is made possible to identify practically all Dutch weights, many of which are still undescribed in museums and private collections. The authors, Zevenboom, gauger in Zwolle, and Wittop Koning, apothecary in Amsterdam, are to be thanked for their effort in writing a book which is indispensable for everybody who works in the field of the history of medicine or history of science. An English translation would certainly find its place in many libraries in this country.

JUDY MENDELS

WILLIAM MACMICHAEL. *The Gold-Headed Cane*. A New Edition with a Foreword by James J. Waring, and a Preface by William J. Kerr. Springfield, Ill.: Charles C Thomas, 1953. xxxii + 185 pp. Ill. $6.50.

In the Foreword, Dr. Waring, with mature reflection, assures us that physicians of the caliber of Macmichael's quintet are still to be found in many medical centers. With a feeling akin to endearment relating to the men rather than to the era, those privileged to carry the Gold-headed Cane were sometimes spoken of as physicians of the Old School. But age need not be the determinant, for there were others, such as John McCrae, Bruce MacCallum and Josiah Trent, who though cut down in their thirties, gave promise of attaining the stature of Cane men.

This medical classic has been so highly regarded that six editions have previously been published. In the Preface Dr. Kerr tells of adapting a Gold-Headed Cane at the University of California in building up the traditions of medicine upon the basis of the Oath of Hippocrates, the Prayer of Maimonides and the Golden Rule.

The history of the ownership of the Original Cane is related in the Introduction

by George C. Peachey. The author of the book was William Macmichael who obtained his medical degree at Oxford in 1816. Although not prominent in practice, he was appointed physician and librarian to the King. For writing the book he received one hundred guineas from John Murray, the publisher.

The text of the book represents situations in which the Cane found itself and which were made articulate by Macmichael. The owners of the Cane were five famous London physicians during the period from 1650 to 1823. The first of these was John Radcliffe, and one of the first experiences of the Cane was a consultation of Radcliffe with two other physicians regarding the treatment of William of Orange for asthma. Radcliffe exhibited a decided lack of tact in his attitude toward the Dutch physicians, but his treatment completely restored the King. Radcliffe's erudition had little to do with his success, but his general good sense and practical knowledge of the world distinguished him from all his competitors.

The Cane next passed into the hands of an accomplished scholar, Richard Mead. One of the most entertaining sections of the book is the account of the consultation over Bishop Burnet by Sir Hans Sloane, George Cheyne, and Mead. Sloane, an urbane, tall, and well proportioned Irishman, was a brilliant conversationalist. Cheyne, a portly Scotchman weighing over four hundred pounds, took snuff incessantly. He was witty, and with a broad brogue he warded off the lampoons regarding his corpulence.

Next the Cane went to Anthony Askew, who from youth had been a great traveler, a circumstance enabling him to collect books, manuscripts, and inscriptions. When he could dispense with no more, his residence in Queen Square contained such an excess that the passages and even the garrets overflowed. He popularized bibliomania.

The Cane accompanied William Pitcairn on a visit to the College of Physicians, thus providing a viewing of the various portraits and busts in that historic interior. Before the portrait of Sir Hans Sloane, Pitcairn told his nephew the story of Sir Hans' museum collections which had cost £50,000. Sloane directed in his will that they be offered intact to the British government for £20,000, that sum to be paid to his family. Additional collections were acquired by Parliament at the same time. The entire purchase was financed by a lottery of £100,000. Such was the origin of the British Museum in 1759.

Matthew Baillie, nephew of John Hunter, was the last physician to carry the Cane. Trained by his famous uncle he taught anatomy for twenty years, and early in his career published a creditable book on morbid anatomy. Somewhat under average size, plain rather than prepossessing in appearance, he spoke the dialect and exhibited the bluntness of his Scotch ancestors. Conversation with Baillie soon revealed him, however, to be one of the most sensible and clear-headed physicians in the Kingdom.

A note by the Editor states that "A short time before the opening of the New College of Physicians, Mrs. Baillie presented to that body a Gold-Headed Cane, which had been successively carried by Drs. Radcliffe, Mead, Askew, Pitcairn, and her own lamented husband."

The technical production of this volume has been so beautifully executed by Charles C Thomas that it will make an attractive addition to any medical library.

HOWARD DITTRICK

JESSIE DOBSON. *William Clift*. London: William Heinemann Medical Books Ltd., 1954. viii + 144 pp. Ill. 21 s.

I have read this book at one sitting with unbroken interest and frequently with delight. Man and boy, William Clift was supremely engaging. To quote the words inscribed on his headstone: "He carried a child-like simplicity and single-mindedness to the close of a long and honoured career." One might add that he displayed, as well, a manly courage, an iron industry, a lively, if rudimentary, wit, great kindness of heart and a degree of intelligence which was recognized at the time (notably by the Royal Society) but for which he has not always received credit since. His doggy devotion to Hunter, his tireless, providential copying of doomed manuscripts—these are the things we remember. Miss Dobson has much more to tell us. For example, we learn that "an early manuscript catalogue of Clift's is still in existence and it does not differ materially either in arrangement or in content from the one prepared by Owen many years later." Altogether, Clift's services were such that it would not be preposterous to call the Hunterian Museum the Hunter-Clift Museum. Clift was unoriginal, but his knowledge of comparative anatomy was known to be extensive; his efforts were titanic to preserve, arrange, supplement, catalogue, and demonstrate Hunter's preparations.

Like Clift himself, Miss Dobson is a little vindictive in her attitude to Everard Home. She has shown, more clearly and unequivocally than heretofore, that Home was a regular, and sometimes a slavish, plagiarist; but it might have been fair to suggest that his plagiarism, like his drinking, was a vicious habit which grew upon him with the years; to cite, for example, only the second, and damning, part of Brodie's evidence strikes me as not fair. Sir Everard was certainly unamiable, unenviable, and in the end contemptible; but there is also plenty of contemporary evidence that in his earlier years he was a very competent surgeon and a valued teacher. In Miss Dobson's book, he was a wretch from first to last, an impression reinforced by two savage portraits—one ludicrous, one loathsome—from the talented pencil of William Home Clift, William Clift's son. In sum, however, what is said about Home is far more convincing than some of the laboured defences recently published.

Since it is now established, once again, that Home's numerous papers in the *Philosophical Transactions* and his lengthy *Lectures on Comparative Anatomy* are drawn pretty largely from Hunter's manuscript materials, is it not time to include these writings in a sub-category of the Hunterian canon and examine them for what they may add to our knowledge of Hunter's work? How many students of Hunter, beating their breasts and crying aloud about lost manuscripts, have ever looked into these volumes for any other purpose than to prove Everard Home a villain? It has not been the business of Clift's biographer to go beyond this demonstration. Next year's biographer of Hunter, on the other hand, would do well to damn Sir Everard rather less and to read him rather more.

Clift wrote in December, 1795: "Mr. Home & Dr. Shaw has been going to make a Catalogue." In 1834 he told a Select Committee of Parliament that three folio catalogues had been prepared between 1794 and 1806, two by himself and one by Dr. Shaw. What was the relationship of Home and Shaw? Of Clift and Shaw? Who engaged Shaw to do this work? His part in the story remains mysterious.

This is a plain, but delightful, tale of a plain, but delightful, man. It is skilfully told. I must, however, regret the total absence of references. A bibliography and a few biographical notes, from which we may learn about Aimé Argand of the Argand lamp but not about Shaw, do not compensate for the deficiency. Would it not have been possible to find some compromise between those "horse-loads of citations," which caused Milton to complain of Burton, and none at all? One pony-load perhaps? The preponderance of manuscript sources is a partial, but only a partial, excuse.

The illustrations are well chosen and well reproduced. If the ground plan of Hunter's house (Plate IV) had been enlarged to the limits of the page it might have been possible to make it out. It is perhaps too bad that we have no example of Clift's remarkable skill as a medical illustrator. One of the original drawings for Baillie's *Morbid Anatomy*, side by side with the engraving, would have been welcome.

LLOYD G. STEVENSON

JAIME JARAMILLO-ARANGO. *The British Contribution to Medicine*. With a foreword by Sir Arthur MacNalty. Edinburgh and London: E. & S. Livingstone Ltd. (Baltimore: Williams & Wilkins), 1953. xii + 220 pp. Ill. $6.00.

Dr. Jaime Jaramillo-Arango, an eminent Columbian surgeon, was first Minister and then Ambassador of the Republic of Columbia to Great Britain during the Second World War. He thus joined the ranks of a distinguished list of medical ambassadors which include from Great Britain itself "Sir Thomas Elyot, Ambassador to the Emperor Charles V; Sir John Finch, Ambassador to Turkey in the seventeenth century; Sir Charles Vaughan, Envoy Extraordinary and Minister Plenipotentiary to the United States (1825-33); Lord Geddes, British Ambassador to the United States (1920-24)." As a lasting souvenir of his mission and a tribute of admiration to the war effort of Britain, Dr. Jaramillo-Arango conceived the idea of writing a general survey of the "British Contribution to Medicine"; the result is embodied in the present work which was written first in Spanish, primarily for Latin-American use, but later translated into English with the assistance of his wife for a wider dissemination. The author's preoccupation with British medicine and his determined endeavors to familiarize himself with the background are described in an appreciative forword by Sir Arthur MacNalty, formerly chief medical officer of the Ministry of Health. Dr. Jaramillo-Arango's thorough knowledge of British medicine, attested to by the scope and content of his book, elucidates not only the accomplishments but the personages responsible, many of whom he knew personally.

The author has chosen to confine his study to six of the most important medical discoveries of the last fifty years which he regards as almost exclusively the achievement of British medicine. These are anti-typhoid-paratyphoid inoculation, the discovery of penicillin, the rôle of the mosquito in the transmission of malaria, the preparation of paludrine, the recognition of vitamins and the development of the modern science of nutrition, and the synthesis of stilbestrol and other products of estrogen action.

The chapters are written principally around these discoveries with a concise but comprehensive historical digest of the antecedent British legacy to medicine provided as an introduction. While the emphasis is, of course, on Great Britain, Dr. Jaramillo-Arango has nevertheless succeeded through a concurrent evaluation of the part of other nationalities to avoid a distorted picture, all too often the case with a nationalistic approach to history. Indeed, the interrelationship of research done in a number of different countries becomes strikingly apparent particularly in the accomplishments of the last few decades; and as evident is the important representation of Great Britain in modern medicine, a fact not readily appreciated by the American doctor.

In describing the conquest of typhoid and paratyphoid fevers, the author critically recounts the pioneer investigations of Wright in vaccine therapy with the resultant transformation in the outlook on these diseases. The complex history of the antibiotics, especially penicillin, is treated in some detail with Fleming, Florey, and Chain given their just due. Manson and Ross are the central figures in the malaria section with a clear correlation, however, with investigators elsewhere. The foregoing three topics are primarily British in focus whereas the remaining on vitamins and nutritional diseases, and the struggle against cancer are more international in scope with the British contribution of lesser consequence. Hopkins, the Mellanby's, Murray, Gyle, and Kennaway receive a prominent part in the latter discussions.

There is little factually new to the historian of medicine in this volume, but the approach and interpretations are refreshing if not enlightening. Numerous footnotes to the original literature, several chronological tabulations, a comprehensive index, and ample illustrations add to the usefulness of the work. Its chief value will be to the practitioner and student who will find it an interesting and informative source.

HERBERT S. KLICKSTEIN

CORRECTION

Due to a typographical error in the review of Ralph Major's *History of Medicine*, which appeared in the *Bulletin*, vol. 29, March-April 1955, pp. 183-185, the price was given as $4.50 instead of $14.50.

THE BULLETIN RECENTLY RECEIVED *

Athrideva Vidyalankar. *Ayurveda-ka-Itihasa.* Prayag: Hindi Sahitya Sammelan, Samvat 2011 (*History of Ayurveda.* From Vedic Times to the Present. With a Preface by Vasudeva Saran Ayraval. Allahabad: Hindi Literary Association, 1955). 254 pp. 2½rupees. (In Hindi, no English summary.)

William Brockbank. *Ancient Therapeutic Arts.* The Fitzpatrick Lectures, Royal College of Physicians, 1950 and 1951. Springfield, Ill.: Charles C Thomas, 1955. 162 pp. Ill. $5.00.

Francelia Butler. *Cancer Through the Ages.* The Evolution of Hope. Fairfax, Virginia: Virginia Press, 1955. xiv + 147 pp. Ill. $2.00.

E. P. Goldschmidt. *The First Cambridge Press in Its European Setting.* The Sandars Lectures in Bibliography, 1953. Cambridge: at the University Press, 1955. x + 100 pp. Ill. $3.75.

George B. Griffenhagen. *Early American Pharmacies.* A Pictorial Catalog of Apothecary Shop Restorations Which Are on Exhibition in the United States. Washington, D. C.: American Pharmaceutical Association, 1955. 23 pp. Ill.

Pedro A. Gutiérrez Alfaro and Ricardo Archila. *La Obstetricia en Venezuela.* Ensayo Histórico. Caracas: Ragón, C. A., 1955. viii + 576 pp. Ill.

J. J. Izquierdo. *El Hipocratismo en México.* México: Imprenta Universitaria, 1955. 263 pp. Ill.

Adam Patrick. *The Enteric Fevers, 1800-1920.* Being the Sydney Watson Smith Lecture for the year 1954. Edinburgh: The Royal College of Physicians, 1955. 46 pp. Ill.

G. P. Srivastava. *History of Indian Pharmacy.* With a Foreword by George Urdang. Second edition, volume 1. Calcutta: Pindars Limited, 1954. xvi + 276 pp. Ill. $2.50.

Lucy Wilder. *The Mayo Clinic.* Second edition. Springfield, Ill.: Charles C Thomas, 1955. viii + 69 pp. Ill. $3.75.

* The *Bulletin* reserves freedom of decision as to the publications to be listed in this section.

CONTRIBUTORS TO THIS NUMBER

ODIN W. ANDERSON, Ph. D., is Research Director, Health Information Service, 420 Lexington Ave., New York 17, N. Y., and Adjunct Associate Professor, Graduate School of Arts and Sciences, New York University.

CARL B. BOYER, Ph. D., is Professor of Mathematics at Brooklyn College, Brooklyn 10, N. Y.

LEON BROTMACHER, M. D., M. R. C. P. (London), formerly Registrar, Royal Infirmary, Cardiff, Wales, is Research Fellow, Guy's Hospital, London, S. E. 1, England.

SIMON B. CHANDLER, M. D., is Professor of Anatomy at the West Virginia University School of Medicine, Morgantown, W. Va.

I. BERNARD COHEN, Ph. D., is Associate Professor of the History of Science at Harvard University, Cambridge 38, Mass.

HOWARD DITTRICK, M. D., died on July 11, 1954 (see obituary, this volume of the *Bulletin*, p. 75 f.).

WILLIAM GOODDY, M. D., F. R. C. P., is Physician, National Hospital for Nervous Diseases (London) and Neurological Dept., University College Hospital, London, W. C. 1, England.

SAUL JARCHO, M. D., is Associate Physician at the Mount Sinai Hospital, New York. His address is 145 Central Park West, New York 23, N. Y.

HERBERT S. KLICKSTEIN, M. D., is Resident in Radiology at the Graduate Hospital, University of Pennsylvania, Philadelphia 46, Pa.

JUDY MENDELS, Ph. D., is Instructor in German at Cedarcrest College, Allentown, Pa.

J. M. D. OLMSTED, Ph. D., is Professor of Physiology at the University of California, Berkeley 4, Calif.

WALTER PAGEL, M. D., is Pathologist at the Central Middlesex Hospital, Park Royal, London, N. W. 10, England.

WALTHER RIESE, M. D., is Assistant Professor of the History of Medicine and of Psychiatry and Neurology at the Medical College of Virginia, Richmond, Va.

RICHARD L. SCHOENWALD, Ph. D., is a Teaching Fellow in History, Wesleyan University, Middletown, Conn.

LEO SPITZER, Ph. D., is Emeritus Professor of Romance Philology, The Johns Hopkins University, Baltimore 18, Md.

LLOYD G. STEVENSON, M. D., Ph. D., is Associate Professor of the History of Medicine, and Honorary Librarian of the Medical Library, McGill University, Montreal 2, Canada.

HENRY R. VIETS, M. D., is Librarian of the Boston Medical Library, 8 The Fenway, Boston 15, Mass.